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ON
SCROFULOUS DISEASES
OF THE
EXTERNAL LYMPHATIC GLANDS,
ETC.

BY THE SAME AUTHOR.

Lately Published, 8vo.

CONTRIBUTIONS TO THE SURGERY OF
DISEASED JOINTS:

With Especial Reference to the Operation of Excision.

No. I.—THE KNEE.

JOHN CHURCHILL, NEW BURLINGTON STREET.

ON
SCROFULOUS DISEASES

OF THE
EXTERNAL LYMPHATIC GLANDS;

THEIR NATURE, VARIETY, AND TREATMENT:

WITH REMARKS ON THE MANAGEMENT OF

SCROFULOUS ULCERATIONS, SCARS, AND CICATRICES.

BY

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MARGATE; ETC.

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TO

MY FATHER,

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CONSULTING SURGEON TO THE MARGATE ROYAL
SEA-BATHING INFIRMARY,
ETC., ETC.,

WHO FIRST DIRECTED MY ATTENTION

TO THE STUDY OF SCROFULOUS DISEASES,

THE FOLLOWING PAGES

ARE

AFFECTIONATELY INSCRIBED.



P R E F A C E.

HAVING for several years been associated with an institution specially devoted to the treatment of Scrofula, and possessed unusual opportunities of acquiring an extensive insight into many of its most frequent and serious phases, I have endeavoured in the following pages to record my experience of the disease when it involves, as it so frequently does, the external lymphatic glands.

It is impossible to overrate the importance of duly recognising, and skilfully treating diseased conditions of the absorbent system.

When first directing attention to the study of scrofulous diseases of the lymphatic glands, I experienced the want of a systematic treatise on the subject; and as none specially devoted to its consideration has, of late years, appeared, I have ventured to supply the deficiency, and am not without hope that the views, classification, and treatment I have enunciated, will be found to embody much that is of practical utility.

While portions of this work may be considered original, and the result of close and extensive observation, still I have not failed to borrow opinions, and make use of facts contained in the writings of many excellent surgeons—all of which, I trust, I have fully acknowledged.

The necessity of ascertaining, in every instance of *so-*

called scrofulous disease of the absorbent glands, the nature of the pathological changes which are taking place, has been fully insisted on; for it is only on a correct appreciation of these alterations that judicious treatment can be adopted.

Treatment, to be really productive of benefit, must, as a rule, be both general and local; for I am convinced that a recourse to one form to the exclusion of the other, will oftentimes be found unavailing.

Among the numerous medicinal agents, the use of which has been advocated, I have reason to be well satisfied with a salt of comparatively recent introduction—Iodide of ammonium. The results I have obtained from a somewhat extensive employment of this substance, are such as to enable me to recommend it, in many instances, in preference to pure iodine, and its usually prescribed salts.

To my brother and colleague, Dr. William Price, of Margate, I am much indebted for valuable assistance, especially in his collecting for me numerous clinical facts, and testing the value of various forms of treatment.

In conclusion, I may add that the subject-matter of the following pages has already appeared in the columns of the *British Medical Journal*; and the favourable manner in which many of my observations were received by a large section of the profession, has induced me to reproduce them *in extenso*.

7, GREEN STREET, GROSVENOR SQUARE,
APRIL 20TH, 1861.

TABLE OF CONTENTS.

| | PAGE |
|---------|------|
| PREFACE | vii |

CHAPTER I.

ACUTE INFLAMMATORY CONDITIONS OF THE EXTERNAL LYMPHATIC GLANDS IN SCROFULOUS SUBJECTS.

Meaning of terms Scrofulous and Tuberculous—Classification of so-called scrofulous diseases of the glands—Similar affections of the absorbent vessels—Acute idiopathic inflammation of the external lymphatic glands—Young children and infants ordinarily attacked—Case—Secondary or consecutive inflammation.

Recognition of the Affection—Pathological Changes
—Effect on function of gland—Suppuration—Suppuration of cellular tissue—*General Treatment*—Mercurial preparations—Narcotics—Quinine, mineral acids, etc.—Iodine—Cod-liver oil. *Local Treatment*—Leeches—General bleeding—Emollient applications—Fomentations—Poultices—*When Suppuration occurs*
—Emollient applications—Artificial and natural openings of acute glandular and cellular abscesses—Advantages of surgical measures—Caustics—The knife—Time at which the surgeon should interfere—Nature of incision—Importance of speedily arresting suppuration, and obtaining healing of wound—Treatment of indurated conditions of the integument, etc.—Iodine—Blisters, frictions, etc.

CHAPTER II.

SUBACUTE AND CHRONIC INFLAMMATION OF THE
EXTERNAL LYMPHATIC GLANDS IN
SCROFULOUS SUBJECTS.

Transitory scrofulous swellings—Division of chronic inflammatory conditions—When specific and confined to the external lymphatic ganglia—When of a secondary character—When internal glands are involved—Tendency of external glands to assume slow and limited inflammatory action—Idiopathic origin—Glands of neck, and face, most commonly affected—Size to which they may obtain—Danger from pressure, etc.—Sensation produced on handling—Age at which the affection is most liable to occur—Chronic enlargement from neighbouring irritation—Causes of such enlargement—Association with various scrofulous diseases—Difficulty of their detection—*Recognition—Diagnosis* of this form of glandular disease, from hypertrophy, from non-vascular derangement, from true tuberculous disease, from encysted and fatty tumours, from chronic abscesses, from goitre, or enlargement of the thyroid gland—*Pathological Changes*—Induration from fibro-plastic matter—Effect on functions of gland—Danger from too frequent manipulation of glands so involved—*General Treatment*—Two main objects to be gained: temporary improvement and permanent cure—Alterative medicines—Tonics—Various preparations of mercury—Iodine—Bromine—Value of iodine—Iodide of potassium—Lugol's solution—Iodide of ammonium—Iodide of iron—Care required in the administration of these salts—Length of time for which it is necessary to administer them—Quantity of iodine that can be given in certain cases—Cod-

| | | |
|--|-----------|-------|
| liver oil : how far it is of direct advantage—Importance of remembering that this affection is not merely an accompanying, but a dependent complication. <i>Local Treatment</i> —Consisting of two kinds—Medicaments for inducing absorption, etc., and means for removal when these have failed — Frictions — Iodine — Mercury—Blisters—Caustics—Simple punctures—Platinum wire—The knife—Advantages and danger from its use—Scars which result | - - - - - | 17-38 |
|--|-----------|-------|

CHAPTER III.

CHRONIC ENLARGEMENT OF THE EXTERNAL LYMPHATIC
GLANDS, FROM HYPERTROPHY OF STRUCTURE
INDEPENDENT OF INFLAMMATORY
ACTION.

Importance of recognising such a condition—Its occurrence under two forms—Difficulty of detecting the cause—Accompanied by constitutional disturbance—Age at which it occurs—Leucocythæmia splenica—Anæmia lymphatica.

Recognition of Hypertrophied Conditions—Importance of considering general constitutional symptoms—*Pathological Distinctions*—Occasional difficulty of always recognising the disease—Tendency of inflammatory action to invade glands thus involved—*General Treatment*—Constipation—Calomel—Tonics—Liquor potassæ—Iodine, etc.—Want of success sometimes following prolonged administrations of iodine—Advantage of change of climate—Sea-bathing—*Local Treatment*—Commonly no very great advantage to be gained from use of iodine—Blisters, ointments, etc.—Direct surgical treatment—Caustics not to be recommended—The knife—Importance of selecting fit cases for its application. - - - - - 39-59

CHAPTER IV.

TUBERCULOUS DISEASE OF THE EXTERNAL LYMPHATIC
GLANDS.

Little difficulty in recognising the affection—May occur at almost any age—Most frequently seen after the second year of life—Common occurrence of tubercle in various organs in young children—Most frequently met with involving the glands between the ages of six and fourteen years—Erroneous views of Louis—Author's views—Occasional occurrence of pulmonary and glandular tuberculosis in adults—Case—Glands of neck most frequently involved—Why such is the case—Author's statistics—Danger occasioned by extensive disease of external lymphatic glands.

Tuberculous disease of the cervical glands—Frequency of the affection—Size to which they may obtain—Commonly associated with tuberculous disease of other organs—Case—Constitutional disturbance—Suppuration often an unfavourable condition.

Tuberculous disease of the axillary glands—Frequency of the Affection—Lebert's and Louis's statistics—Case—Size to which glands may obtain—Tubercle and cancer incompatible—Erroneousness of this doctrine—Case.

Tuberculous disease of inguinal glands—Seldom affected — Case — Tendency of tubercle to be deposited in lymphatic glands situated in other parts—Extent to which they may become involved—Case.

Recognition of the Disease—May be mistaken for other affections—Manipulative distinction—From engorgements—Cystic tumours—Chronic abscesses—Case—Malignant disease—Cases—Relationship between scrofula and syphilis.

Pathological Changes—Occurs in two distinct forms—Infrequency of the grey, semi-transparent variety—Opinions of Lebert and Rokitansky—Author's opinion—Tubera—Infiltration of tubercle—Enlargement of gland previous to deposition of tubercle—Alterations of tubercle—Withering—Calcification—Cretification—Case—Complete osseous transformation—Composition of the cretaceous degeneration—Softening—Liquefaction—Suppuration—Frequency of Suppurative action—How it takes place—Cellular abscess—Mr. Goodlad's description—Ulceration—Rapidity of—Case—Difficulty of distinguishing between scrofulous lymph and true tubercle—Chemical analysis of tubercle—Microscopical analysis—Tuberculous degeneration occurring in previously diseased glands—Appearances of glands implicated with tubercle.

Ulcerations connected with scrofulous and tuberculous glands.

Form of ulceration—Condition assumed by integument as ulceration advances—Extent—Case—Cicatrices which result—Their probable tuberculous character.

General Treatment—So-called specifics of the ancients—Treatment should be of two kinds—First. Importance of due attention to bodily health, etc.—Second. Administration of certain medicines—General state of health—Importance of good diet, ventilation, etc.—Scale of diet at Children's Hospital, Margate—Dyspepsia, etc., common accompaniments of this disease.

Medicinal Treatment—Iodine—In early stage—Administration in various preparations—Iodide of potassium—Lugol's solution—Value of small and frequent doses—Iodide of ammonium—Iodide of iron—Dr. Cotton's experiments—Cod-liver oil—iodides of

lead and mercury—Therapeutical action of iodine—M. Velpeau's opinions—Author's opinions as to its effects, etc.—Bromine—Mercury—Calomel—Bichloride of mercury—Author's objections to use of mercurial preparations—Iron—Value as a tonic—Baryta—Potassa—Sodium—Salt-water—Lime—Analysis of water at Margate—Limo-water—Hypophosphite of lime—Dr. Churchill's advocacy of it—Author's opinion of its value—"Chemical food"—Gold—Manganese—Cod-liver oil—Action of other oils—Analysis of—Oil emulsions—Quantity of oil that can be administered—Case—Advantages of inunction—Mineral acids—Vegetable tonics and bitters—Conium—Purgatives—Author's objections to their use—Value of baths of salt-water—Iodine—Bromine—Treatment of individual phases of the disease—Author's statistics from Children's Hospital at Margate—Importance of maintaining bodily health and vigour—Means for obtaining this end.

Local Treatment—Treatment pursued by the ancients—Author's treatment according to the various conditions presented—Firstly. When it is desirable to obtain resolution—Warmth and its advantages—Importance of adequate clothing—Fomentations and poultices—Their application often injudicious—Cold applications of water and lotions—Their use condemned—Cullen's opinion—Really of little real value on any occasion—Friction—By means of starch, ointments, etc.—Liniments and oils—Dr. Copland's views as to the resolution and absorption of tuberculous matter—Ozonised oils—Iodine in juniper and other oils—Unguents—Their ancient repute—Value and convenience of ointment of iodide of ammonium—Tar—Paints and tinctures—Resort to these means much too common—Uso condemned—Blisters and plasters—Former some-

times of advantage—Latter of no avail—Electricity and galvanism—Their inefficiency—Caustics and actual cautery—Disadvantages of—Secondly. When it is desirous to destroy rebellious tuberculous glands—Caustics and actual cauteries—Danger of destroying healthy parts—Various plans for using caustics—General use disapproved of—Introduction of foreign substances into diseased glands—Common practice with continental surgeons—Way employed—Caustics used—Potassa fusa, chloride of zinc, etc.—Iodide of starch—Author's preference for potassa fusa—M. Guersant's opinion of caustics—Use of heated wires—Probably of value when discriminately employed—The knife—When it should be employed—Care required in its use—How glandular tumours are to be removed—Importance of avoiding a large scar—Necessity of inquiring into the history of cervical glandular enlargements before resorting to the use of the knife—Case—Removal of axillary glands—Case—Thirdly. Nature of surgical treatment when suppuration has commenced—Author's practice—Local applications—Fomentations and poultices of use when judiciously employed—Caustics—Baudelocque's practice—Author's objections to caustics—The knife—Its advantages—At what period and to what extent it should be used—Case—Early incisions—Case showing their value—Opinions of Lebert—Ranking—Smith—Lloyd and Author as to kind of incision—Value of speedy union of the lips of incision—Fourthly. Surgical treatment required when ulceration of skin ensues—Fomentations and poultices when useful—Lotions of utility when sinuses co-exist—Iodine solutions—Baudelocque's formulæ—Mercurial applications—Unguents—Author's opinion not favourable to their general use—Caustics—General condition of parts involved in ulceration—Caustics of

use in three conditions: Firstly. When ulceration is recent, etc.—Nitrato of silver and potassa fusa—Preference for the first-named—Manner of application—Case—Irritability of scrofulous ulcers—Difficult to heal; Secondly. When ulceration is more complicated, etc.—Use of iodine solutions—Potassa fusa—Cases—Sulphate of copper; Thirdly. When fistulæ exist with ulcerations, etc.—Action of platysma myoides muscle—Advantage of treating these ulcerations by pressure, etc.—Caustics preferred to the knife for destroying sinuses—Fourthly. Treatment of scars, cicatrices, etc.—Lotions, use of—Solutions of iodine salts—Chloride of ammonium, etc.—Unguents—Their value in reducing aplastic deposits—Care required in their selection and application—Caustics—Characteristics of scrofulous scars and cicatrices—Chloride of zinc and potassa fusa preferred—How to be applied—Growth of scars—Importance of regulating their formation—Mr. Paget's observations—The knife—Use often judicious—Division of cicatrices—Case—Frequent sites of scrofulous scars—Entire removal of scars—Case—Tagliacotian operations—Contraction of tendons of arm—Advantages of division—Case. - - - 52-159

SCROFULOUS DISEASES

OF THE

EXTERNAL · LYMPHATIC GLANDS.

CHAPTER I.

MANY disordered conditions, which involve the absorbent glands from infancy to advanced manhood, have been described by the majority of both ancient and modern writers as partaking of the nature and characters of *Scrofula*.

In considering these so-called scrofulous affections, I shall attempt to classify them in such a way as to shew the utility of an arrangement, which more readily enables the practitioner not only to form a tolerably correct impression as to the nature of the diseased action, but to adopt a line of treatment best fitted to bring individual cases to a successful termination.

Before further approaching the consideration of a subject accompanied with some slight difficulty, it may, perhaps, be advisable to attempt to define the meaning of two sister terms, *scrofulous* and *tuberculous*, which are oftentimes of no very clear appreciation, and to inquire how close a relationship, so far as morbid conditions of the absorbent glands are concerned, exists between them.

At a very early period in the history of medicine, the terms *χοιραδες*, *scrofula*, and *struma*, were employed to designate certain enlarged and diseased conditions of the lymphatic glands, especially those situated in the region of the neck. As the study of disease advanced, and the pathology of morbid

conditions of the system became better understood, the above terms acquired a more comprehensive signification. The extended views of many able observers, and particularly those of Wiseman, expounded over two hundred years ago, aroused the attention of practitioners to the importance of considering other diseases, not hitherto included, as partaking of the scrofulous type. Since this period, additional experience has more fully propounded the extended meaning of an appellation which, unfortunately, is compelled to be almost of hourly use and importance to those whose professional pursuits are carried on among both the rich and poor of civilised nations.

In this country, scrofula or struma is very generally employed to signify, to use the words of a well known modern writer, "a state of constitution distinguished in some measure by peculiarities of appearance even during health, but much more by peculiar liability to certain diseases, including pulmonary phthisis." (Paget's *Lectures on Surgical Pathology*.) The chief of these diseases are various abnormal conditions of the lymphatic glands; of the skin; of cellular, mucous, and other tissues; of the bones, joints, synovial and other membranes; of various organs, such as the eye, liver, kidney, testicle, breast, etc.; and, indeed, of almost every tissue and organ which compose the body.

The chief pathological changes which ensue in these so-called scrofulous diseases are due to an abnormal tendency to admit a more or less modified process of inflammation, ulceration, and suppuration, influenced in kind and degree by peculiarities of constitution induced by certain artificial means, such as indifferent nourishment, bad ventilation, and various unwholesome influences, and capable of transmission from parents to offspring. But the term scrofula is, moreover, used (whether judiciously is a point for consideration) to include such affections, occurring in individuals who more or less plainly exhibit a certain unmistakeable diathesis, which consists in the deposition of a special morbid material termed *tubercle*.

The frequency with which tuberculous depositions are found constituting, or closely associating with, so-called scrofulous manifestations, is amply sufficient to show how very difficult it is always to define the exact meaning of scrofula or scrofulous diseases, without including those affections in which tubercle plays an important part.

Hence it must appear that, while scrofulous or strumous affections of various organs and tissues frequently consist in a development of tubercle, there are, nevertheless, numerous occasions in which, so far as observations extend, no such perceptible condition obtains; and, therefore, the term scrofulous must sometimes, if not always, be employed to include both tuberculous and certain non-tuberculous diseases, and be generally accepted in that comprehensive way, which usage and the want of a more definite phraseology have assigned to it.

Nevertheless, attempts have been made to distinguish with greater accuracy those diseases which are strictly scrofulous, and those which depend on a special tuberculous deposition. M. Lebert has written fully and ably on this point, and endeavours to prove that such a distinction can in general be drawn, and applied with advantage to their appreciation and management.

Limiting the consideration of this important question to certain forms of so-called scrofulous disease of the absorbent glands, it will be seen how far consistent the observations now offered are with the results of practical experience.

The morbid alterations, both of structure and function, into which the external absorbent lymphatic glands are liable to degenerate in scrofulous constitutions, may, without regard to relative frequency, be classed under the following heads:—

- I. Acute, Subacute, and Chronic Inflammation, or Lymphadenitis.
- II. Chronic Enlargement, or Simple Hypertrophy of Structure, independent of Vascular Derangement.
- III. True Tuberculous Alterations,

Before discussing, however, these various morbid conditions, it may be well to inquire to what extent the absorbent vessels, so intimately associated with the glands, are liable to be included in inflammatory and other disturbances occurring in a scrofulous habit of body.

It will be seen, when treating of the various diseased conditions to which the external absorbent glands are susceptible, that very acute inflammatory disturbance is, as a rule, an infrequent complication in strictly scrofulous habits. The same rule holds good as regards the absorbents; for they seldom exhibit well marked inflammatory excitement of an exalted type, although under lesions not strictly idiopathic considerable irritation, and inflammation itself, may obtain, even though the strumous diathesis be prominently portrayed.

In subacute or chronic forms of glandular enlargement, arising from systemic disturbance or local irritation, the connective lymphatics do not frequently show any marked sign of implication. In truly scrofulous and tuberculous diseases, the lymphatic tracts are, however, more often the seat of morbid alterations. Such affections are, it would appear, the result of absorption, and not of independent deposition; for, as a rule, the lymphatics situated in close relationship with a tuberculous gland, are more liable to be included in similar action than those more remote.

A scrofulous condition of the valves of the absorbents has been described, but has only been detected on a *post mortem* examination; so that, in all probability, its existence is fraught with little real danger or inconvenience. In the lacteal system of absorbents, however, scrofulous and tuberculous depositions are of very common occurrence; and their presence oftentimes seriously complicates, and, in a manner, causes an important and fatal disease—*tabes mesenterica*.

ACUTE INFLAMMATORY CONDITIONS OF THE EXTERNAL
LYMPHATIC GLANDS IN SCROFULOUS SUBJECTS.

It has already been observed that truly acute inflammation of the lymphatic glands in individuals possessing a scrofulous tendency is comparatively rare; although Wiseman and other experienced authors have related instances of its occurrence. Everyday experience, however, tends to prove that a more or less modified inflammatory action is very prone to invade the superficial absorbent glands; but such disturbance, as Hunter has clearly pointed out, is greatly controlled by the existence of a special diathesis. When acute inflammation does involve one or more portions of the external glandular system in scrofulous subjects, it may occur under two distinct conditions; either as an apparently idiopathic affection, or as a secondary or consecutive coincidence.

The glands most exposed to the invasion of more or less acute inflammatory disturbance, arising as a specific affection, are those which by situation are rendered susceptible to the action of certain agencies, as vicissitudes of temperature, injuries, etc., combined with an inherent disposition to functional and structural irregularities. Hence it is that the glands of the neck, face, and head, are much more frequently the seat, not only of simple inflammation, but of more complicated affections. What theory might suggest, is borne out by practice. More than two-thirds of the cases of idiopathic glandular inflammatory disturbance which I have seen, and from the statistics of which I now write, were confined strictly to those glands situated above the shoulders, and especially to those placed near the base and angle of the lower jaw, and consequently exposed to atmospheric and other injurious influences.

The subjects most ordinarily attacked, are young children, and infants of a delicate constitution, exhibiting at this early period, perhaps, no very decided scrofulous tendency save a general suspicious conformation. The first local symptom

which attracts the attention of the mother or nurse to the existence of any mischief taking place, is a slight swelling, and, perhaps, heat and redness of the part, with tenderness to the touch. The swelling and pain, at first comparatively trivial, increase, and render the little patient extremely irritable. The constitution, probably already debilitated, and, perchance, associated with more manifest scrofulous disease, begins to suffer. The pulse quickens ; more or less irritative fever succeeds ; the tongue is furred ; the bowels are costive ; and the urine scanty, and saturated with lithates. It may be that the inflammatory action is confined to the gland ; but, if the symptoms advance, it is more than probable that the cellular bed in which the gland reposes becomes affected, and at an early date shows evidence of implication. Should the vascular excitement not overstep the bounds of serous or fibrinous exudation, little local destruction will have resulted. The effused fluid is absorbed ; and the lymph is either taken up, or becomes more or less consolidated and organised, giving to the gland an indurated appearance. But, as just observed, the irritation, commencing in the gland, is very apt to extend to the cellular tissue in which it lies. Indeed, the liability of this loose surrounding structure to adopt the inflammatory tendency is so great, that often a very wholesale destruction takes place. The extension of the swelling and pain which usually accompany adenitis is, as a rule, principally owing to the inclusion of the tegumentary and cellular tissues.

Suppuration of a gland, the sequel of idiopathic inflammation in such subjects as now claim attention, is, I believe, of comparatively infrequent occurrence ; and, although the formation of abscess results from such a condition, still it is not always situated in the proper glandular structure, but sometimes in the cellular tissue by which it is surrounded.

The following woodcut, from a patient aged 15, under my care at the Hospital, well illustrates the extent to which the cellular structure may become, in a few days, the seat of

limited abscess, owing to primary irritation of the absorbent glands. (Fig. 1.)

A recognition of this fact is essential ; for, while suppuration of an absorbent gland is often a tedious and complicated process, that of the cellular tissue, especially when limited, is less serious, and more easy of management. There are cases, however, in which both the inflamed gland and its coverings are freely involved in inflammatory lesions, and readily pass on to suppuration.



Fig. 1.

Although, for the sake of illustration, the changes which obtain from acute inflammatory causes have been described as

limited to a single gland, yet, as is well known, two, three, or even an entire chain or clump may be, either at the same time or in succession, involved. This is by no means unfrequently the case; for, owing to the conglomerate arrangement of the gland-clusters, especially about the neck and armpit, it is rare to find the mischief confined merely to a single member of a numerous community.

Secondary or Consecutive Inflammation. Acute inflammatory conditions of the lymphatic glands, occurring as secondary or dependent affections, are unusual. Such disturbance may, however, obtain from any direct lesion of neighbouring parts, and follow as a sequent of poisonous absorption. It is rare, however, in very scrofulous subjects, to find such condition result from irritation; and, even when it does occur, it is often found devoid of some essentials which constitute exalted inflammation. I have occasionally seen, in strictly scrofulous children, active inflammation of the absorbent glands, consequent on the occurrence of fevers and other debilitating influences: but, while a subacute or chronic form is very common, that of a more acute nature is much less general.

When such exalted inflammation attacks the absorbent glands, there exists little or no distinctive difference between it and that which obtains idiopathically, or apparently so, and consequently the foregoing observations are equally applicable. It must, however, be remembered that when secondary acute inflammatory lesions of the lymphatic ganglia do obtain in scrofulous individuals, either as accompaniments or sequents of other diseases or injuries, they are more or less modified by the existence of the constitutional diathesis.

Recognition. The only affection which, I think, is liable to be confounded with acute inflammatory lesions of the external lymphatic glands, is limited inflammation of the cellular tissue. Some difficulty is often experienced in arriving at a correct appreciation on this point; and few surgeons of much experience will undertake to say, on numerous occasions, in which struc-

ture the primary mischief has commenced, when both the gland and its cellular bed are included in the inflammatory disturbance. As a rule, however, when any swelling, heat, and tenderness exist in the tissues in the neighbourhood of absorbent glands, it is probable that the original mischief commenced in one or more of the lymphatic organs; and should early attention have been directed to these alterations, a positive indication of the exact seat of lesion will be easily obtained. The affected gland or glands may be found enlarged, more or less globular in form, and semielastic to the touch, although the covering tissues be swollen, puffy, and painful.

Besides the above local indications, there will exist considerable systemic derangement; and, perhaps, a more or less perfect history of an innate tendency to lymphatic disease may be established.

Pathological Changes. From whatever cause the lymphatic ganglia become acutely inflamed, the morbid changes which ensue are identical in kind, though modified in degree. Swelling, as previously stated, is the earliest symptom which directs attention. It is owing, it would appear, to a swollen condition of the gland itself, which results from more or less general increased vascularity, and the subsequent serous infiltration of its parenchymatous tissue. The nature of the exudation, however, which takes place, is dependent on the degree and extent to which the inflammation reaches. Should the gland be acutely inflamed, its areolar structure may not only become highly injected, but extravasated with blood. When the exudation is simply serous, it may be absorbed; and the local inflammation being reduced, the gland soon returns to its normal condition.

Should the effusion that takes place be fibrinous and plastic, the gland is apt to become solidified; absorption may, however, entirely remove all trace of the plastic material; but, should such not occur, the gland remains more or less permanently indurated, with its functions, perhaps, only

partially interfered with. The plastic exudation thus thrown out, however, is occasionally so extensive that the normal glandular substance becomes considerably atrophied or displaced, so that the true character of the affected organ is irretrievably destroyed. Lymphatic ganglia have been shewn to retain their function, even when extensively involved in inflammation ; and, although the tubular arrangement may be included in the general disturbance, still total destruction is not a frequent occurrence.

When inflammatory action has passed beyond the stages of serous and plastic exudation, it is apt to advance to suppuration. The formation of abscess necessarily involves, more or less, the integrity of the entire gland, and leads to its complete destruction.

The character of the purulent fluid is modified in accordance with the specific diathesis of the individual in whom it occurs. If the strumous habit be well marked, the pus will bear certain indications, which may at once distinguish it from that which obtains in abscesses occurring in constitutions not perceptibly tainted. Should the patient be delicate and of wasted powers, the secretion will often be found devoid of those characters which constitute thick and healthy pus. If the scrofulous habitus be prominent, mingled with the purulent matter will be found shreds of degenerated and withered lymph, more particularly to be described when adverting to marked scrofulous suppuration of glands.

Although such progressive changes, as above alluded to, may involve one or more glands, still, as before observed, it is seldom that the inflammatory mischief is limited to the glandular structure. The cellular bed in which the affected organ reposes, generally very early shows signs of implication. When the vascular excitement is not very extensive, the gland merely becomes glued to the cellular structure by which it is surrounded ; but, if the inflammatory process proceeds, the formation of pus may lead to a definite secreting surface being esta-

blished. The great tendency exhibited by the cellular tissue, so intimately associated with an affected gland, to partake in the vascular derangement, has been well illustrated by Mr. Goodlad, in an able treatise published many years since (*On the Diseases of the Absorbent System, etc.*, 1814).

General Treatment of Acute Inflammation. Active inflammatory lesions of the absorbent system in scrofulous subjects are, as a rule, attended with more or less general constitutional disturbance, whether occurring in infants, in young children, or in adults.

As already stated, the tongue becomes furred, the pulse quick, the bowels costive, the urine scanty and high coloured; to which irregularities are added restlessness, loss of appetite, irritation, and pain. It may be that, a few days before the actual detection of any derangement of the absorbent glands, the patient becomes restless, and refuses food; but it is not till the appearance of any marked cause of irritation that the general symptoms create much attention. The derangements, which now become more or less prominent signs of local mischief, are to be encountered in such a way that, while the pressing symptoms are combatted, the constitutional powers, which in scrofulous individuals susceptible to attacks of adenitis are often feeble, are not materially lowered. When the patient is of tender years, and it is suspected that the inflammatory lesion arises from a direct cause, and the irritative fever is strongly marked, the following treatment is the one I usually adopt in hospital as well as in private practice. The bowels should be first acted on by means of small doses of hydrargyrum cum cretâ, combined with a few grains of compound rhubarb powder, administered every or every other night, at bedtime; while small and frequent doses of liquor ammoniæ acetatis and spiritus ætheris nitrici, combined with some bitter infusion, will tend to procure moisture of the skin, and allay the increased heat of the body. Should the pain and distress be severe, and lead to restlessness and want of sleep, small doses of a narcotic may be advan-

tageously administered. If the patient be an infant or young child, a few drops of syrup of poppies will generally prove sufficient; but, if not, small doses of opium or chlorodyne may be substituted. As the local mischief advances, the system still further sympathises; and, if the powers of the patient be much lowered, a supporting and tonic plan of treatment will be advisable. Quinine with the mineral acids and chlorate of potash will be found of value, especially when combined with the last mentioned drug. In addition, stimulus, if needful, in the shape of chloric ether or alcohol, must not be forgotten; while the introduction into the system of nutriment is important, to enable the patient to stand the shock that often accompanies the formation of pus and its imperative removal. Should the inflammatory process stop short of suppuration, the affected gland or glands will remain for a time more or less swollen and indurated, and it will then become important to assist the debilitated powers in procuring removal by absorption of the probably effused plastic material to which the enlargement is due. Iodine, without doubt, is the most valuable adjunct that we possess; and, should the system be in a condition to allow its administration, small and repeated doses, in combination with cod-liver oil, may prove of advantage, especially if a marked tendency exists to scrofulous outbreaks.

The most useful forms in which to prescribe iodine will be hereafter described. Besides iodine, mercury is often recommended as an assistant, to obtain resolutions; but it is seldom that the practitioner is called upon to use a drug which, under certain circumstances, is capable of producing more harm than good.

Local Treatment. Much may be done to alleviate pain, retard the progress of the inflammatory mischief, and avert destruction of neighbouring tissues, by attention to local treatment.

In the earlier stages of inflammatory *engorgement*, accompanied by pain, tension, swelling, and redness of the skin, it

may be needful to reduce the vascular excitement by local depletion. The application of one or more leeches is, therefore, sometimes advisable; and the abstraction of a limited amount of blood attended with benefit. As a rule, however, I cannot advise local bleeding; for I have seldom found it expedient, especially in instances in which the scrofulous tendency has been prominently portrayed. Bleeding in scrofulous disease is in general to be deprecated; for the blood is usually watery, devoid of a due amount of fibrine and red globules, and consequently can ill afford diminution, as has been well shown by MM. Guersant, Andral, Nicholson, etc.

Emollient applications will generally be found more grateful than cold evaporating lotions, especially when the inflammatory mischief runs high. They may consist of warm decoctions of poppy heads, linseed or bread poultices, or simply of fomentations of hot water. When, however, there appears doubt as to the suppurative termination of an inflamed gland, it is not always prudent to apply either fomentations or poultices. An undue persistence in such means is not unfrequently attended with results which it is advisable to avoid.

Should *suppuration* unfortunately be established either in the gland or cellular tissue, or in both (in such cases, the inflamed gland will probably, at an early period, have become adherent to the cellular membrane and the covering integument), it is of importance to bring it to a satisfactory termination. When the secretion is limited to the gland, there will in general be but little chance of the fluid being absorbed; but when implicating the cellular membrane, its absorption is not so improbable, for it must be remembered that the sac of an abscess is both secretive and absorptive. When purulent fluid has formed, and its increase is perceptible, whether confined to the gland or including the cellular structure, and it exhibits a tendency to reach the surface by gradual thinning of the integument, then those means must be followed which will afford assistance to nature in accomplishing such an object. Emol-

lient fomentations and poultices now become useful adjuncts, and may be stedfastly employed till the matter has reached almost to the surface, when more definite surgical means will generally be needed to give relief from pain, prevent the further destruction of adjacent parts, and bring the mischief to the most satisfactory termination. Various opinions exist as to the propriety of allowing a natural or artificial exit for the pent-up matter. The generality of surgeons, however, believe that timely assistance given by the lancet or caustic is better practice than permitting ulceration or bursting of the thinned covering integument; but, although the majority of authorities coincide on this point, still there is a strong minority who insist on the general advisability of not interrupting Nature in her own course. As might be supposed, there are numerous occasions when the latter practice is the better of the two; but I think, as a rule, there can be no doubt that a judicious employment of surgical means is accompanied with many advantages.

At one time, caustic substances, as the caustic potash, nitrate of silver, etc., which corrode the integument at the place of application, were much used by surgeons to form an eschar, so that the purulent matter might find an easy and ready exit at a point which had thus been artificially undermined. In abscesses of an acute nature, such a plan is fraught with disadvantages, and is seldom employed, except in instances in which the knife cannot be resorted to, but where it is needful to give artificial assistance.

In the employment of the knife and lancet, there is one great question always to be entertained in every individual case—At what time, or in what condition of the parts, should the knife be used? Now, while general principles on this point have been inculcated by the most experienced authorities, still no very definite rule can be laid down as applicable on all occasions. It must, however, be acknowledged that a resort should not be had to the lancet, as a rule, before the covering tissue

has become thinned, and there is distinctive evidence of purulent fluid. To cut into an abscess, especially one in which one or more absorbent glands are concerned, ere the contained matter has reached nearly to the surface, is unquestionably bad practice; for very considerable pain is thereby given, and inadequate assistance afforded.

But individual cases will call for modifications of practice, although the wiser plan, in the majority of instances, is to wait till decided fluctuation is established, and the covering tissues appear in a condition fit to be cut. A limited incision with a sharp knife or lancet is all that is generally required; for it must be admitted that extended openings are seldom accompanied with much advantage, while future inconvenience, as the ever-telling unsightliness of a scar larger than occasion required, points to the too heroic and unnecessary interference of the surgeon.

Although the pent-up fluid has been evacuated, still it does not follow that suppuration will necessarily cease. It has been asserted that, in scrofulous depositions, a marked tendency generally exists to admit the formation of suppurative processes; and hence it is that considerable difficulty is often experienced in healing even an acute abscess occurring in connexion with a strumous habit of body. The means, however, for attaining such an end, in rebellious cases, will be further considered when speaking of the more precise forms of scrofulous abscesses in connexion with glands. Suffice it to remark, that the sooner the closing of the purulent cavity is effected, the better; for continuous secretion is often accompanied with an amount of distress to the system which in after years may be proved to have acted unfavourably, in having laid the foundation of more permanent and serious mischief.

Should the inflammatory mischief not have passed on to suppuration, but merely to an effusion of plastic and coagulable material sufficient to cause more or less permanent swelling of the affected gland, an indurated condition obtains, which it is

the endeavour of the surgeon to reduce. As the morbid action decreases, gradual subsidence of the swelling probably follows; but if not, it becomes advisable to use certain artificial means to assist the debilitated absorptive processes in their function. For this reason, it is usual to have recourse to the topical application of iodine, mercury, blisters, frictions, and other aids, both therapeutical and mechanical, to promote the removal of the swelling. In what way these means are best put in practice, will be more conveniently considered in treating of the reduction of various forms of chronic indurated glands.

CHAPTER II.

SUBACUTE AND CHRONIC INFLAMMATION OF THE EXTERNAL
LYMPHATIC GLANDS IN SCROFULOUS SUBJECTS.

INFLAMMATION of a low insidious form, attacking the external and internal lymphatic glands in scrofulous constitutions, is of frequent occurrence at all periods of life. In many particulars, it differs from the more active inflammatory lesions which were lately described. It is met with both as a primary and secondary affection, furnishing, I believe, the greatest proportion of so-called transitory *scrofulous swellings* of the neck, abdomen, and other parts; and may be most advantageously considered under the following heads:—

Firstly. When it occurs as a specific affection, and is apparently confined to the lymphatic ganglia situated on the external surface of the body.

Secondly. When it involves the external glands, as a consequence or accompaniment of various scrofulous affections.

Thirdly. When it affects internal lymphatic glands, such as those of the intestine, mesentery, etc.

The former two divisions of the subject will be now considered; the latter meeting with attention at some future time, when discussing the various abnormal conditions of those glands which are situated within the cavities of the body.

1. All the absorbent glands situated on the exterior surface of the body exhibit a greater or less tendency to assume certain specific forms of slow limited inflammatory action; and, although such conditions are not always the direct result or accompaniments of a well marked scrofulous diathesis, still they are very frequently closely associated with some such constitutional taint. When a merely simple, slight inflammatory

enlargement of the absorbent glands occurs without any very apparent complication, and with little or no distress, either local or general, it is not always easy to decide whether the derangement is the direct result of external agencies, an inherent disposition to disease, or systemic irregularity.

Some authorities have doubted the possibility of the absorbent glands becoming idiopathically affected. The late Professor Thomson of Edinburgh believed that all chronic inflammatory swellings of the lymphatic glands in scrofulous subjects were symptomatic, and arose from irritation in parts not glandular. On the other hand, Dr. Henning strongly maintained that atmospheric irregularities were, if not the sole, at least the chief sources of derangement of the glandular system, which was *always* the primary seat of scrofula; and that, if other parts of the body were affected, it was but as a consequence. Cullen and other acute observers freely admitted a peculiar constitution of the lymphatic system, and imagined that it not only predisposes to various derangements of the glandular portions, but actually allows a development of certain idiopathic phenomena. Such an opinion is, perhaps, still to be justified on the ground that, while our knowledge of the nature and causes of diseased actions is materially advanced, we are yet frequently compelled to allow that a large proportion of cases of chronic glandular enlargement are to be met with, in which no perceptible cause can be discovered, save one of a more or less constitutional character.

The conditions we are now considering are most common to the glands situated in the neck and face. Both the superficial and deeper sets are alike the subjects of the affection, but those most superficially placed seem to be more susceptible. The earliest evidence that arouses the suspicions of the patient or surgeon to the existence of this form of glandular disturbance, is an increase in the size of the affected glands. This increase is not, however, usually accompanied with any great degree of pain or local disturbance, provided there exist no

direct inflammatory process. Little attention is, therefore, attracted to the change that is taking place; for the enlargement may be strictly confined, at first, to merely one or two of the glands, and, under favourable conditions, may subside or suddenly cease. Where the specific action, which has caused the increase in bulk and size, is arrested, the gland or glands either remain permanently enlarged, or else gradually resume almost their original dimensions. A removal of the morbid action may again cause similar enlargement; but on this, as well as on all subsequent occasions, the resolution becomes more tedious and imperfect.

When the superficial glands of the neck are included, the number affected is, I am inclined to believe, less than when those more deeply seated are involved, and the cause of their implication is more liable to be referred to external impressions.

Whatever portion of the lymphatic system is included, each individual gland affected may enlarge from the dimensions of a pea to that of a small orange. This accession of bulk may be more or less rapid, and accompanied with an amount of disturbance proportionate to the nature, extent, and cause of the originating mischief.

When the glands of a scrofulous subject—the cervical, for instance—are suddenly affected by exposure to cold and wet, it is not unusual to find them, during the space of a few days, or even a single night, enlarge without any sensible increase of inflammatory symptoms. Such enlargement, independent of pain, is to be attributed, in a great measure, to the naturally free and loose connexions of the glands. Let, however, those more deeply placed among the large nerves and carotid vessels become similarly affected, and it will be found that very frequently pain, or, at any rate, something more than uneasiness, will be experienced.

The most serious consequences occasionally ensue from the great size to which the deep cervical glands attain. The incon-

venience that arises solely from pressure on important parts is sometimes imminent, and accompanied with the most harassing symptoms. Instances are well authenticated in which fatal results have occurred from extensive enlargement of these ganglia, owing to the pressure they have exerted on the œsophagus, trachea, nerves, and large carotid vessels.

When one or more affected glands have arrived at a certain size, the irritation, combined with the irritability of the system, may produce various changes, either in the true glandular structure or in the neighbouring cellular tissue. When such result, it may be that softening of the gland ensues, and admits of suppuration, or else an abscess forms in the cellular parts. In either case, the skin soon partakes of the unhealthy disturbance, and readily admits of ulceration. Should the scrofulous habit of body be strongly developed, it is more than probable that the gland may exhibit undoubted evidence of more marked scrofulous or even tuberculous degeneration. It is rare, however, for glands included in simple chronic or sub-acute enlargement to suppurate, unless under peculiar circumstances; but the formation of abscess, external to the affected gland, is of more common occurrence, and may arise from simple irritation, or the accession of constitutional causes. It is not unusual to see an entire chain of simply enlarged glands, and only one or two taking on an increased inflammatory action. I have, at the present time, a patient under my care exhibiting this special feature. Several of the superficial cervical glands are much enlarged, and have been so for months, but exhibit no disposition to become inflamed, with the exception of one situated in the centre of the neck, not larger than a very small walnut, which has softened, and will probably suppurate. There is no reason to suppose that in this instance the destructive process is due to any morbid disposition, but simply to the accession of increased irritation. On the other hand, enlarged glands may exist for many months, or even years, influenced in size by variations of temperature and systemic irregularities,

without exhibiting any tendency to destructive inflammation. This is well instanced in a little boy who is constantly under my notice, on account of many permanent cervical swellings, which cannot be made to yield to any kind of treatment, either local or constitutional: The child is in good health, and appears to suffer but very slight, if really any, inconvenience from the increased size of the glands. The affection, moreover, appears limited to the glands situated in the neck.

What will be presently more insisted on, though now worthy of passing remark, is the peculiar sensation which is afforded to the touch when a manipulating examination is made of this kind of glandular enlargement. In general, the affected glands, especially if of recent and tardy growth, exhibit a soft, semi-elastic, cushiony feel. They roll about when slight pressure is made on them by the point of the finger, which movement is permitted by reason of the loose manner in which they are connected with the cellular tissue. They are traceable under the skin, when of moderate enlargement, not only by the touch, but by the undulations to which they give rise along the free surface of the neck. The glands situated in near proximity to the lower jaw appear to be more susceptible of subacute or chronic swelling than those occupying other localities, and, when associated with disturbance of otherwise placed glands, are generally the last to subside.

No age is free from this form of glandular enlargement; still, the period of life at which it is most generally met with may, it would appear, be fixed between the years of five and eighteen, although it is very commonly encountered in mere infancy, and not unfrequently in advanced manhood. My own statistics would lead me to the belief that it is more usually seen, during the earlier years of life, in males than in females. Of fifty cases which I have tabulated of simple chronic inflammatory enlargement of the cervical glands, occurring in children from the age of 3 to 16 years, 33 examples were in males, and 17 in females. I cannot offer the

same correct statistics of cases occurring in more advanced life, but my impression, judging from those I have collected, would show the same or nearly analogous disproportion.

2. Under the second division must be classed the majority of cases of externally situated absorbent glands which become affected by a slow subacute or chronic inflammatory action, as a direct consequence of some neighbouring specific irritation, or as an accompaniment of certain varieties of scrofulous diseases. The glands of the neck pre-eminently exhibit the greatest tendency to take on such disposition, and are usually associated with certain well marked peculiarities, which at once leads to the suspicion that a more or less general scrofulous tendency exists. When such condition obtains, as the direct result of local irritation, the cause, especially in young children, will be found to be very commonly dependent on certain affections of the hairy scalp, face, and other parts; muco-purulent discharges from the eyes, nose, and ears; and irritation produced by teething. In such instances, the glandular complication will, as a rule, prove to be secondary; for, on inquiry into symptoms, it will not infrequently be discovered that the lymphatic swellings commenced after the appearance of the affections of the scalp or other parts. Moreover, the removal of the apparent cause, in such cases, at once allows subsidence of the glandular enlargement, oftentimes so rapidly as to destroy all doubt on the question.

Although for description the glands of the neck have been selected, yet those of other localities are prone to become similarly affected. It by no means follows that the glandular portion of the lymphatic system immediately associated with the local source of irritation is always involved, to the exclusion of more distant parts. I have constantly known the glands of the neck to be in a state of irritation when remote parts were harassed, and I always bear this fact in remembrance when seeking for the cause of glandular implication. But slow chronic enlargement of the external glands is commonly de-

tected as an accompaniment, or, in other words, as a more or less direct manifestation of distinct scrofulous disturbance; and although, through the whole or greater part of the period of growth, the affected ganglia may exhibit no other morbid condition save what appears to consist of a modified chronic inflammatory increase in size, yet undoubtedly this must, if not as a rule, at least commonly, be regarded as a decided scrofulous manifestation. The correct appreciation of this condition is oftentimes difficult; but it is imperative, for on its correct discovery, in a great measure, depends satisfactory treatment. With almost any truly scrofulous disease, this condition of the glandular apparatus may exist. I have frequently examined the bodies of the victims of scrofula in various forms, and found many portions of the lymphatic system affected in no other way except in that now under consideration, although some portions of the absorbent ganglia have been strictly tuberculous. The general observations already offered regarding the frequency, etc., of this form of enlargement, under a different phase, are equally applicable to that now under consideration; while the various pathological changes which are apt to ensue at the different periods at which the affection makes its appearance are, as will be presently explained, dependent on various circumstances, both constitutional and local.

Recognition. The correct appreciation of this form of glandular enlargement is, as already observed, of very great importance, as it at once relieves the patient of much anxiety, and enables the surgeon to adopt measures which, when correctly employed, are very frequently followed with the greatest advantage. But due recognition is oftentimes attended with difficulty, for there are certain abnormal conditions of the lymphatic and other parts, which more or less closely resemble enlargement from slow chronic inflammatory disturbance.

The following conditions are those which appear to possess a more or less close analogy. *Firstly.* Hypertrophy of lymph-

atic glands from apparent non-vascular derangement. *Secondly*. A true tuberculous condition of the glands. *Thirdly*. Encysted and fatty tumours. *Fourthly*. Chronic abscesses. *Fifthly*. Goitre or enlargement of the thyroid gland.

Firstly. Chronic inflammatory glandular enlargement is not always easy of distinction from that form of hypertrophy which obtains without any apparent inflammatory action. In an early stage, and when arising from any cause which is likely to lead to vascular disturbance, this kind of enlargement may, as a rule, be more generally anticipated. But there are occasions when no discriminative examination will serve to distinguish it, save that afforded by manipulation. To the touch, such enlargements will generally be found less hard, more elastic, and less defined, than those arising from simple chronic hypertrophy. Nevertheless, the pain on handling, no matter how slight, is often the only deduction that can be obtained from manipulation. In still more dubious cases, therapeutical management is the sole means which enables a correct appreciation of the nature of the affection; for while the reduction of hypertrophy, the result of a low and tardy form of inflammation, is sometimes comparatively easy, the resolution of that resulting from non-vascular causes is much more difficult. Chronic inflammation, although of a very low form, is, moreover, more rapid in its progress, frequent in its relapses, and ordinarily attacks such glands as are not commonly included in non-inflammatory hypertrophy. In young people, as well as in those more advanced in years, both forms of enlargement are frequent, although chronic adenitis is more usually the immediate result of certain appreciable causes. Both forms are met with in the cervical and facial glands, although true hypertrophy is more commonly limited, I believe, to the deeper layer of the glands of the neck, and, unlike inflammatory glandular lesions, at least, so far as I am aware, very rarely involves the glands of the armpit and groin.

Secondly. In the earlier stages of development, the greatest difficulty is often experienced in ascertaining whether enlarged glands seated in the neck, etc., result from simple inflammatory changes or from decided tuberculous degeneration. A variety of comparisons will, however, frequently enable the surgeon to pronounce as to the specific action that is taking place, although the analogy is often so strong that an early and direct decision is often impossible. The difficulty of early appreciation is, however, further increased owing to tuberculous depositions seldom ensuing before some enlargement of the glandular structure has taken place. When the increase in size is unaccompanied by any marked symptom of a decided tuberculous character, arises from any known causes, and exhibits a tendency to resolution, then, in all probability, the glandular mischief is devoid of any specific complication, and entirely depends on temporary derangement of one or more portions of the lymphatic system. At a later period, provided the affected glands have attained considerable dimensions, and that tuberculous disease exists definitely marked in other portions of the body, then it is more than probable that the deposition of tubercle has become the direct source of irritation. Should destructive inflammation ensue, and extend to the cellular tissue and skin, additional evidence will be still more in favour of tuberculous complication; while an examination of the pus, should suppuration occur, will at once decide any further doubt. But, as will be presently shown, deposition of tubercle is oftentimes unaccompanied, or followed, even at a remote period, by inflammatory changes, ending in ulceration and suppuration. A sure diagnosis in such instances is therefore, as may be readily conceived, of still greater uncertainty; and the surgeon will oftentimes have to wait patiently, till time and the use of therapeutical means have decided the correct nature of the puzzling affection.

Thirdly. Encysted and fatty tumours, when situated on the neck, especially near the base of the lower jaw, and in and over

the parotid gland, often give rise to some speculation as to whether they may not be closely simulated by chronic glandular swellings. I have often myself been struck with the near analogy that exists between these various morbid conditions; and experience has taught the value of careful investigation before pronouncing as to their precise nature.

When an encysted tumour is situated near to one or more of the cervical lymphatic ganglia, an erroneous impression, without regard to certain symptoms, is by no means improbable; but if the cyst become inflamed, its due recognition, as M. Guersant has pointed out, is at once easy, by reason of the peculiar nature of its contents. One point of importance, as bearing on the diagnosis of an encysted growth is, that while it is comparatively infrequent to find a single gland included in chronic inflammation, to the exclusion of others forming, perhaps, the same plexus, it is equally rare to find more than one encysted tumour occupying the same region, without it be on the hairy scalp. Manipulative distinction, a careful insight into the nature of the origin and duration of the enlargement, and an inquiry into the constitutional habitus of the individual, will generally at once lead to a truthful appreciation.

With regard to the similarity existing between fatty tumours and simple chronic inflammatory swellings of the lymphatic ganglia: I have known such growths, occupying the region of the neck and armpit, give rise to the suspicion of glandular enlargement, although the soft, elastic, and generally painless character of the adipose swelling, usually allows a correct diagnosis.

Fourthly. It is by no means infrequent to find chronic abscesses presenting points of almost positive identity to this form of glandular disturbance; and the analogy is oftentimes so close, that great care is required in arriving at the real nature of the swelling. Although fluctuation is not always obtained in the case of chronic abscess, still it is generally appreciated; and this alone will often serve to point to the right character

of the doubtful tumour. But there are occasions in which, as every surgeon of experience must admit, considerable doubt is cast over the nature of a swelling suspected to consist of fluid; and I have more than once known a simply enlarged gland treated as a chronic scrofulous abscess.

Fifthly. Goître and certain specific enlargements of the thyroid gland, especially when one of its lateral lobes is only affected, may give rise to suspicions that the swelling is dependent on chronic inflammation of one or more of the lymphatic glands. I know of no better criterion whereby to judge of suspicious thyroid development than by noticing the effects produced on the gland by the act of swallowing. Should the swelling remain stationary, it will, in all probability, be a lymphatic or other affection; but if it be associated with the movements of the upper portion of the windpipe, then, without doubt, some thyroid development will be indicated. For this practical hint I am indebted, as I am for many other valuable clinical facts, to my friend and former distinguished teacher, Mr. Fergusson, for I do not remember having seen it mentioned in any surgical work.

Pathological Changes. The simplest form of low and tardy inflammatory action taking place in a lymphatic gland is accompanied with swelling dependent on a greater or less injection of the vascular portion. Should this vascular excitement suddenly be arrested, diminution in the size of the affected gland ensues; but if it extend, more permanent increase in bulk follows, as the result of exudation. On examining a gland thus altered, it is rare to find the enlargement dependent on the existence of serous infiltration, even to a slight amount, as is usually the case in more acute forms of lymphadenitis. The increase is more dependent on a plastic material which fills up the areolar portion, and, if not absorbed, leads to a permanent thickened and consolidated condition, and the entire gland appears converted into a fibroid structure. When the mischief has been localised to one or two spots of the

gland, only partial alteration ensues, and consequently only a certain portion of the glandular function is interfered with.

Under various stages of subacute and chronic inflammation, a closer investigation will afford the following particulars:— Should the enlargement be characterised by rather a high state of vascular excitement, the cut surfaces of an included gland will present a pinkish or even reddish hue. Should the fibro-plastic material have somewhat universally replaced the true glandular structure, a translucent, white, firm, tough appearance, will be detected, which perhaps, on pressure, especially if of recent formation, will exude a hyaline fluid. On the other hand, if the development of fibro-plastic matter have been slight, the gland will preserve a pale yellow colour. It by no means follows, however, that because a gland remains for an indefinite period affected, its functions are lost or greatly impaired, although considerable induration with atrophy of the true parenchymatous tissue may result. (*Lebert. Rokitsansky.*)

Provided, therefore, that no untoward causes, either constitutional or local, ensue during the various stages of this affection, resolution or permanent enlargement results. It has already been observed that resolution obtains through reabsorption of the exuded material, and that permanent hypertrophy depends on the formation of a new substance, which is either incorporated with the true glandular structure, or else takes its place, causing complete or partial obliteration of its functions and normal constituents. But, before reabsorption can remove this product, various abnormal conditions may overtake the gland. Inflammation, either simple or specific, is apt to lead to vital changes. Not unfrequently the mere handling of an enlarged gland is sufficient to excite increased and dangerous inflammatory symptoms; while exposure to cold and various constitutional causes not uncommonly admit the lighting up of destructive vascular excitement.

I have occasionally known frequent and, perhaps, rather rough manipulation of a glandular swelling, lead to rupture

of the minute vessels bordering the new tissue that has been formed, and thereby occasion ulceration and suppuration, especially in those instances in which a decidedly scrofulous constitution existed. It will be presently seen that a fruitful source of destruction to simply enlarged glands is the accession and localisation of tuberculous depositions. Should the additional inflammation excited pass on to suppuration, the character of the purulent fluid will be influenced in proportion to the more or less well marked scrofulous diathesis of the individual in whom the mischief occurs.

General Treatment. Two main objects are to be aimed at in resorting to the general treatment of subacute and chronic inflammatory swellings of the external lymphatic glands—temporary improvement and permanent cure, with the amelioration and eradication of any special diathesis that may exercise a decisive effect in the production of the glandular mischief. Before, however, adverting to the therapeutical treatment, it may be well to premise that the greatest reliance may oftentimes be placed on the effects of good diet, and fresh, if not sea, at least, pure air. Many cases of simply enlarged glands in scrofulous and delicate children, who are yearly sent to the Metropolitan Infirmary at Margate, are speedily benefited by the improved and liberal diet they receive, and the fresh air they breathe; for not only indifferent and scanty food, but deprivation of light, and unwholesome airs, have long been acknowledged, if not the sole, at least strong contributing causes to lymphatic and scrofulous diseases.

It has already been stated that low and tardy inflammatory lesions of the absorbent glands may originate as primary or secondary affections, and occur at any period of life; but that childhood is *par excellence* the age during which they present. If unassociated with any pre- or co-existing affection, but occurring in a more or less well marked scrofulous constitution, the indications are to procure resolution, and improve a

condition of constitution which has admitted such specific lymphatic disturbance. When several glands—a complete chain on either side of the neck, for instance—are involved, and the patient is in indifferent health, the pulse low and feeble, the appetite meagre, the bowels costive and irregular, with a disposition more or less influenced by the specific temperament under which the system labours, then the first indication is to correct any functional irregularity of the viscera. The liver, in all lymphatic derangements, will generally be found at fault; the kidneys act inefficiently; the stomach loses its tone; and the bowels consequently sympathise with the general disturbance. Under such circumstances, it is advisable at once to direct attention to the improvement of the functions of the disordered organs. With this view, I am in the habit of commencing the treatment of most lymphatic derangements by the exhibition of certain alterative and slightly purgative medicines, whether in the infant or young person. When such a course is expedient, I very generally prefer a mild preparation of mercury in combination with rhubarb and magnesia, and combine the two in the following form:—

℞ Pulv. hydrarg. cum cretâ, gr. j ad gr. viii; pulv. rhei co., gr. vi ad ℥j.

The dose is, however, of necessity in proportion to the age, temperament, and requirements of individual cases; and the frequency of its repetition regulated by circumstances.

When the use of the above formula is prevented, various other medicines may be used, to the fancy of the patient or practitioner, the end to be attained being the chief object of importance. To amend the appetite, the use of mild tonics, associated with alkalies or the mineral acids, according to circumstances, is highly advantageous. If such means be insufficient, after being duly persisted in for some time, and the glandular swellings assume larger dimensions or remain in a truly chronic state, then it will be advisable to resort to such medicinal agents as are known to exert a direct and beneficial

effect on the absorptive system. Among the most ordinary in use are the various salts of mercury, iodine, and bromine, etc. Although I have recommended the alterative use of mercurial preparations, yet I am, as a rule, decidedly opposed to their administration in any way to induce absorption of the material forming the increased size of the involved gland in scrofulous patients. I am confident, after repeated trials of various mercurial preparations, that their exhibition is in very many instances not only unadvisable, but harmful. Debilitated and cachectic constitutions will not allow of their being pushed to the extent that is often needed ere the absorptive effect can be traced. Notwithstanding these observations, I am willing to admit that sometimes mercury is a most valuable agent, when properly employed, in the reduction of that form of gland-swelling now under consideration, especially when combined with iodine or bromine, in the *Pharmacopœia* forms of the iodide, biniodide, and bromide of mercury. Should evidence exist that a personally contracted or an hereditarily transmitted syphilitic taint complicates the otherwise simple character of the chronic inflammatory swelling, I know of no medicinal combinations of greater value. In such instances, the bichloride of mercury, combined with the oxy-sulphuret of antimony, is likewise of much advantage.

Far in advance of any mercurial preparations stands iodine, either in its pure form, or combined with alkalies and minerals, such as potassium, iron, etc. For obtaining rapid effects of the drug, I am in the habit of administering it in combination with some alkali; as I believe, with many former writers, that its virtue, especially when the scrofulous type is well developed, is more marked. The preparation of greatest utility I have found to be the iodide of potassium, in frequent, but small doses. In this country, the tendency with most practitioners is to administer comparatively large doses of the salt; but my own experience points to the belief that small and repeated exhibitions are of much greater value. I am in the habit,

when treating infants and children, of commencing with half a grain to a grain twice or three times a day, dissolved in distilled water, or a mild tonic. For adults, the dose may be increased to two or even three grains; but I seldom augment the quantity, although I often advise its more frequent exhibition when circumstances demand a rapid effect from the drug. Should an additional quantity of free iodine be considered advantageous, it will be well to substitute the form known as Lugol's solution, and prescribed in this country under the *Pharmacopœia* name of liquor potassii iodidi compositus. Care, however, must be taken that the dose is small, so that the increased activity of the salt may not cause any disagreeable effects.

Within the last few years, iodide of ammonium has been re-introduced to the notice of the profession by that well known physician and physiologist, Dr. B. W. Richardson. Dr. Richardson states that he has found it, after considerable experience, superior to the combinations of iodine with potassium and sodium. Its rapidity of action appears greater; for experiments have shown that its effects, though analogous to those of iodide of potassium, are more quickly produced. Mr. Hunt, of the Skin Hospital, is also of the same opinion. My own individual acquaintance with the drug, although not large, is sufficient to allow me to corroborate in a measure its highly extolled virtues. The dose is about the same as that of the iodide of potassium, and a very strong analogy exists between the two salts.

The combination of iodine with iron has long been a most favourite preparation, and is usually prescribed in the form of a syrup—syrupus ferri iodidi (*Pharm. Lond.*); but the good effects of iodine are not so immediate as when the metal is administered in one or other of the previously named forms. From twenty drops to a drachm is the usual dose, repeated, according to circumstances, twice or thrice during the day.

In the exhibition of iodine in any one of the above mentioned or other forms, not only great care, but considerable aptitude, is

required, for the advantages to be derived from it are most precarious; and, while the practitioner is often delighted with the valuable and rapid effects of the drug, he is as constantly compelled to confess disappointment. It has been advised by those practitioners whose experience enables a mature judgment, that, provided the use of the medicine is, after a fair persistence, unattended with the wished for results, its exhibition should be discontinued for a time, and the system, which is, perchance, incapacitated from appreciating its virtue, corrected, and so improved or modified that a recontinuance may be attended with more favourable success.

The length of time for which it is necessary to administer iodine in cases of enlarged glands, before its effects become permanent and of advantage, is very uncertain. I have frequently succeeded in affecting the constitution in a week, or a few weeks; at other times, months have elapsed ere the medicine has found a permanent footing in the system. I have under my care at this present time, at the Great Northern Hospital, a young woman with two large chronic inflammatory glandular swellings under the lower jaw on the right side. She has taken iodide of potassium for five months, but it is only at this period that the iodine, which is also locally applied, has so affected the system, as gradually to remove the very hard and indurated swellings.

The quantity of iodine that can be administered without causing inconvenience, or, perhaps, advantage, in cases of glandular affections of all kinds, greatly varies, in accordance with the age and constitutional diathesis, etc., of individuals. While with some patients comparatively small and slight doses rapidly cause disagreeable symptoms, in others the drug may be given with apparent impunity in large and accumulative quantities, without occasioning any irritating and obnoxious results. For further remarks on the use of iodine in this and other forms of scrofulous affections of the absorbent glands, I must refer the reader to that portion of this work which

treats of the therapeutical management of glandular tuberculosis.

In the administration of the bromine salts, I have had little personal experience; but I find that they are much used on the Continent, and are highly extolled.

How far the administration of cod-liver oil is directly successful in inducing the removal of chronic inflammatory swellings, is uncertain; but there is little doubt that, by improving the constitution and elevating the tone of the various organs, it promotes the accomplishment of healthy actions. Indeed, so important is it to maintain the strict integrity of the functions of various organs, that it is, perhaps, as a rule, advisable to prolong the general treatment even when all mischief has been apparently quite removed.

When more or less chronic inflammatory enlargements of the lymphatic glands coexist with marked scrofulous affections, or are the direct result of certain diseased conditions of neighbouring structures, resolution is more difficult to obtain, and demands a modified plan of treatment. In young children, enlarged cervical glands constantly occur, as the accompaniment or direct result of the various forms of scalp and skin affections; but, as soon as the local cause is removed, they gradually subside. The various eruptive skin-diseases, so peculiar to infancy and childhood, are not, however, always attended with glandular sympathy; and I have noticed, and constantly referred to the fact, that it is generally those children who present a truly scrofulous and delicate constitution that exhibit well marked coincident implication of the glands. Doubtless the mere irritation produced by the tegumentary disease is amply sufficient to cause simple irritative sympathy of proximate glands; but, I believe, it requires the development of a peculiar temperament to admit any definite inclusion of the lymphatic system. Besides affections of the skin, any diseased condition of other organs in scrofulous subjects is amply sufficient to give rise to glandular implication.

With regard to the general treatment, such means must be used to procure resolution of the glandular mischief as is compatible with the management of the accompanying tegumentary and other diseases that may exist. As a rule, however, the exhibition of iodine and other *so-called* specifics will, in general, be advantageous, although, from the complication of maladies, a different plan of treatment may be advisable. Whatever course of remedies may be used, it is all important to bear in mind that, in the great majority of cases, the lymphatic derangement is not merely an accompanying, but a dependent complication.

Local Treatment. In concert with the general therapeutical management of enlarged glands arising from a slow and limited form of vascular derangement, local treatment will oftentimes prove advantageous. It consists of two kinds.

Firstly. The topical application of what ancient writers termed *medicaments*, for the purpose of inducing absorption of the material which has more or less permanently caused enlargement of the organ.

Secondly. Removal of the enlarged glands, by means of caustics and other more direct surgical means, as the knife, etc.

The topical remedies, and their mode of use to promote the more rapid dispersion of these chronic gland-swellings, will be discussed with greater advantage when considering their application to truly tuberculous conditions of the external lymphatic ganglia. It may, however, be briefly stated that those agents which prove of most service are the various solutions and ointments of iodine and mercury; while frictions with cod-liver oil, ordinary stimulating liniments, blistering tissues, etc., have likewise their value. The readiness with which such enlargements disperse, especially when unassociated with any well marked scrofulous complications, and in no way involved with tubercle, under the topical use of iodine, is often surprising;

and the question has frequently arisen in my own mind, whether resolution is really dependent on the absorptive powers of iodine, or simply on a stimulating action common to other applications. I have oftentimes submitted this query to a practical test, and feel assured that other topical applications have not, at least in scrofulous subjects, the same value.

Sometimes, however, notwithstanding both general and local treatment, the lymphatic glands remain permanently thus enlarged, and give rise to certain inconveniences, if not to actual pain and discomfort; so that it becomes expedient to consider the propriety of adopting more definite measures.

When the enlargement is confined to one or two glands superficially situated, as in the neck, or at the base of the lower jaw, for instance, and the morbid condition has been inaccessible to repeated treatment, the surgeon, for various reasons, may deem it expedient to suggest the removal of the unsightly and, perhaps, dangerous growths. This may be accomplished in a diversity of ways.

The insertion of caustics of various kinds is with some surgeons a favourite method. With others, acupuncture with a fine needle or small knife is preferred. Some practitioners, especially those of France, make heroic use of the actual cautery and heated platinum wire; while the majority prefer, when feasible, the use of the knife. Whatever means are employed, one sole object is sought for, although in very different ways—the removal of the enlarged structures.

To the insertion of caustics into chronically inflamed and subsequently indurated glands, I very decidedly object. I have seen this plan followed in some of the Parisian hospitals; and, while there is much to be said against it, I cannot advance one single favourable point to enable even a trial of it. I have seen holes dug with a knife in glands in this condition, and stuffed with sticks of caustic composed of chloride of zinc and paste of flour and gum; and, in carefully watching cases in which such a plan had been adopted, I have, I am sure, not too readily

arrived at an opinion regarding its decided disadvantages. Besides caustic of the above description, others, such as the caustic potash, nitrate of silver, etc., are much in favour with some surgeons. A gland thus invaded with caustic sooner or later suppurates, and is by degrees disintegrated. The effect of such action on the covering integument and neighbouring parts will be fully considered, when adverting to the destruction of tuberculous glands by the same means.

Simple punctures by fine needles have found ready advocates as a method of inducing a certain amount of extra inflammatory action in the enlarged gland or glands, which shall either promote absorption, or cause suppurative destruction of the increased and altered organ. I have resorted to this plan with success in a few instances ; but must confess that, while occasionally it is advantageously employed, it is sometimes injudiciously put in practice. I have only to-day heard of an instance in which a resort to this means was followed with grave constitutional and local symptoms, although the patient ultimately did well.

The heated platinum wire, and even the actual cautery, have occasionally been used not only as discutients, but as destructive agents, in this form of advanced chronic glandular disturbance ; but I cannot think that any material advantage is to be gained by their adoption. I have used the platinum wire ; but it has been when I knew the gland operated on was involved with tuberculous deposit. In France, I have seen obstinate chronically enlarged glands treated by dotting over the investing integument with the actual cautery, and have, in two or three instances, resorted to similar practice ; but I can in no way advise its adoption, while much is to be said against it. When permanently enlarged glands are so situated that they do not involve important vascular and nervous structures, give rise to great inconvenience and deformity, and are limited in number, they may be successively and prudently removed by means of the knife. Superficial absorbent glands, situ-

ated about the base of the lower jaw and along the sides of the neck, when enlarged and indurated, can be thus well removed. In such cases, I have frequently resorted to the use of the scalpel with good results, and have assisted my colleagues, Mr. Gay and Mr. Lawson, at the Great Northern Hospital, in similar examples. There is a gland situated close to the under surface of the base of the lower jaw, in near proximity to the facial artery, which often becomes indurated, and needs removal. In performing the operation, care is required that the artery be not cut. I have seen it divided twice lately, in effecting removal of the gland, a complicated wound being produced. Caution must also be observed, when glands of this indurated character are removed, that no great nervous tracts lie in danger of the knife, and that the tumours be not too numerous or deeply seated. In the museum of St. Bartholomew's Hospital is a preparation showing a very extensive mass of indurated cervical glands of fifteen months growth, which was removed by Mr. Vincent from a child six years of age. The case was one badly selected for an operation; for in the mass of glandular tumours are to be recognised branches of the cervical and spinal accessory nerves. The child died shortly after the operation, of debility, with disease of the lungs. The operation, when adopted under advantageous circumstances, is generally easy of execution, and the result all that could be wished for. The scar that remains is usually slight, especially if union of the lips of the wound have taken place by adhesion; and, from all I have seen regarding this mode of permanent riddance of isolated indurated glands, I feel fully justified in advocating its adoption when feasible. .

CHAPTER III.

CHRONIC ENLARGEMENT OF THE EXTERNAL LYMPHATIC GLANDS,
FROM HYPERTROPHY OF STRUCTURE, INDEPENDENT
OF INFLAMMATORY ACTION.

I HAVE been induced to consider simple enlargements of the external lymphatic glands occurring in scrofulous subjects under two distinct forms, because I believe that a very large proportion of glandular swellings arise independently of appreciable inflammation. Such a distinction was formerly but slightly, if at all, noticed by authors who have written on the subject of glandular affections; and I am the more desirous to insist on a distinction, because I am sure a correct interpretation can be thus more easily offered as to the non-effect of certain supposed resolvents and discutients, administered for the cure of this form of *so-called* scrofulous swellings.

Rokitansky, in discussing the various affections to which the lymphatic glands are subject, enumerates under their "anomalies of volume" a distinct hypertrophy, which he considers to consist in an excessive accumulation of parenchyma between the lymphatics interspersed through the gland. He adds, "that in the present deficient state of our knowledge in reference to the structure of lymphatic glands and to the signification of their parenchyma, we must include under the above head (hypertrophy) all enlargements of lymphatic glands which do not depend upon hyperæmia, inflammation, or any obvious secondary formation: although it cannot be doubted that, by such a classification, we are compelled to include with hypertrophies many specific alterations of the glandular parenchyma." (*Pathological Anatomy*, vol. iv.)

Although, pathologically speaking, this kind of hypertrophy may be generally distinguished from that which obtains as the result of more or less chronic inflammatory action, still, during life, it is oftentimes exceedingly difficult to draw a positive distinction. It may occur under two forms. In the first, several of the superficial or deeper glands of the neck (for it is in this region that the affection is usually first detected) are involved. On passing the point of the finger along the sides of the neck, especially near the angle of the jaw, several small more or less oval swellings will be distinguished, varying in size from that of a pea to a large bean. They are painless, or nearly so, when handled, somewhat elastic, of no great hardness, and can be rolled in the cellular tissue in which they repose. The skin is not, in the least, involved, nor is the patient conscious of their presence at an early period. The state of the health is often apparently good, and frequently only the eye and touch of the surgeon afford evidence of their existence. It may be that the enlargements fail to increase, and remain stationary for many months, or even years.

On the other hand, the affected glands, from various causes, may slowly progress in size, and become firmer and more consolidated to the touch, although no sign of inflammatory action is discoverable. Indeed, glands thus involved seldom admit any direct acute or even subacute inflammation; and consequently suppuration is exceedingly rare, although a marked scrofulous or even tuberculous implication may occur. It is probable that the tendency to hypertrophy may extend to the entire lymphatic glandular system; and that not only the glands immediately associated with those first detected in a state of enlargement, but those having a totally different situation, may become affected. This is of common occurrence. I have frequently known almost every lymphatic gland in a state of hypertrophy; and reference to many museum preparations will show how commonly such is the case. By many observers, it has been supposed that the glands of the mesentery show

the earliest indication of hypertrophy, although the affection is more easily recognised when occurring in the neck. Certain it is that hypertrophy of the mesenteric and other abdominal glands is frequently detected even when no evidence exists of the implication of ganglia more externally situated. Although it has been stated that the increase in size of such enlargements is gradual, still sometimes they rapidly obtain to considerable dimensions, and present very serious obstacles to the functions of respiration, deglutition, and circulation. Under such circumstances, the affection assumes the gravest aspect, and the surgeon is often puzzled to know what means to enforce in order to arrest the further development of the disease.

The second form under which hypertrophy may present is less formidable, and apparently of lesser moment. One, two, or perhaps a single nest of lymphatic glands, may alone be involved. The early signs of the disease are analogous to those exhibited when the affection is more universal. The increase in size is, however, more rapid, and is apt to obtain to a far greater extent. The most usual site is, according to Lebert and other observers, the angle and base of the lower jaw, where the deformity produced is often considerable and inconvenient.

Although the recognition of the disease is not, as a rule, difficult, yet it is oftentimes exceedingly embarrassing to detect the primary cause. It would appear that very frequently the origin of such hypertrophy depends on some systemic derangement more or less immediately connected with the lymphatic system, although it is often difficult to define the exact nature and particular seat of the *origo mali*. Rokitsansky is explicit on this point, and states that he is "inclined to regard hypertrophy of the lymphatic glands as a secondary symptomatic phenomenon, and not as a primary and substantive anomaly". (*Op. cit.*, vol. iv.)

In whatever light we regard the origin of the affection, it

must, I think, be conceded that a more or less perturbed state of the constitution generally co- if not pre-exists. Many cases illustrating this remark have been under my notice; and, on looking discriminatively into individual histories, it is not difficult to arrive at a definite conclusion on the point. It is by no means uncommon to see the disease well marked in concert with clearly defined scrofulous affections of the skin, scalp, bones, joints, and various organs, showing that it may occur as the direct accompaniment of truly scrofulous manifestations, as well as independently of less strongly evidenced marks of a strumous constitution.

Although no particular age is alone susceptible of this form of glandular hypertrophy, still it is usually accounted an affection of childhood and youth. I have, however, seen isolated examples in individuals approaching advanced manhood, and in the decline of life. I removed some time since a strictly hypertrophied lymphatic gland from the neck of a woman near fifty years of age; and I have now under notice a patient who is the subject of an hypertrophied gland under the base of the lower jaw, at the age of seventy-three. It is difficult positively to assert which sex is more commonly the subject of this form of glandular disturbance. My own statistics of all lymphatic glandular diseases show that males are more frequently affected than females; but I am unable to speak with positiveness in regard to hypertrophies of glands. Although it is usual with English authors to fix a certain temperament as more disposed to scrofulous affections, whether of the glands or other organs, still it is very doubtful if general experience will allow such an arrangement. The majority of surgeons who have paid attention to this point feel inclined to admit that a *lymphatic temperament* predisposes to most scrofulous affections, and Riche-
rand has gone so far as to assert that strumous diseases are but an exaggeration of this particular constitutional condition (*Nosog. Chirurg.*, par M. Richerand). Baudelocque, whose name is well known in conjunction with the subject of scrofula,

by reason of his work entitled *Etudes sur les Causes, la Nature, et le Traitement de la Maladie Scrophuleuse*, derives, however, quite an opposite conclusion; so that, although it may be feasible, from limited observation, to adhere to certain impressions, still it is, I believe, impossible, or at least impolitic, positively to assert that glandular hypertrophies are limited to one form of scrofulous constitution. I shall, however, take an opportunity, in the next chapter, of stating the results of my own carefully collected statistics on this point.

While adverting to the subject of glandular hypertrophy and its occurrence in scrofulous individuals, I cannot avoid saying a few words concerning a disease in which the lymphatic glands are frequently interested. In that condition termed *leucocythæmia splenica*—in which the blood is in an impoverished condition and an abnormal amount of white corpuscles exists, with enlargement of the spleen, accompanied by special fibroid deposits in this and other organs, and followed by dropsy of the legs and abdomen—the lymphatic glands are frequently involved in hypertrophy. Moreover, when this condition is associated with extreme prostration, and an anæmic state of the system, and when the lymphatic glands are *considerably* affected, with an absence of white cells in the blood, the name *anæmia lymphatica* is given.

Although the affection has been considered by Drs. Hodgkin and Bennett, Kölliker, etc., yet it has received still closer attention from Dr. Wilks of Guy's Hospital; and some very valuable observations have been lately published by this able physician, wherein he quotes cases in which not only the lumbar and other internal lymphatic glands were involved in a more or less nucleated fibrous hypertrophy, but also those of the neck and axilla. One case in particular, which was under the treatment of Dr. Pavy, is particularly interesting, as illustrating the care that is needed in arriving at a correct diagnosis of the true nature of the disease which involves the lymphatic system. (*Guy's Hospital Reports*, vol. v, series 3, for 1859.)

In various late numbers of the *Lancet*, several important cases illustrating the implication of the lymphatic system in this disease have been recorded by Dr. Gibb; and of late the affection has met with the attention it so well deserves.

I have no doubt whatever that this condition of the lymphatic glands, associated with constitutional disturbance and disease of other organs, has frequently been mistaken for tuberculous and scrofulous mischief, and treated accordingly. Such a mistake is of the gravest nature, and one that requires prompt recognition, if any success is to be obtained from treatment; for while local applications are often insisted upon when the hypertrophy of the external glands is considerable, under the impression that the mischief is of a tuberculous character, they are really of little avail, but, perhaps, of decided harm when the enlargement is associated with other well marked symptoms of leucocythæmia.

Recognition. It has already been shown in what particular way this form of glandular enlargement may be distinguished from that which obtains from chronic vascular excitement, and, therefore, it is needless to recapitulate the observations previously offered. Before, however, expressing an opinion from simple manipulative examination, it will always be necessary to take into consideration the general constitutional symptoms. Besides the analogy that exists between these two kinds of enlargements, there is a great similitude to other morbid productions, such as, encysted and fatty tumours, chronic abscesses, and goitre. The remarks that were offered when pointing out the chief diagnostic distinctions between these diseases and chronic inflammatory conditions of lymphatic glands, will apply with almost like advantage to their discrimination from true glandular hypertrophy, so that it is scarcely necessary to dwell longer on this point.

Pathological Distinctions. Although the pathological dif-

ferences between this form of enlargement and that arising from inflammatory disturbances seems at once broad and determined, still in practice it is found constantly narrowed, and the two kinds of hypertrophy often exhibit sufficient similitude to admit, if not of confusion, at least, of comparatively nice distinction. On this point, Mr. Paget has well observed that "there are cases intermediate between hypertrophies and the result of inflammation, and no line of distinction can be drawn among them, if we rely on their anatomical characters alone; for in the lowest degrees of inflammation the exuded material may be organised into a very near likeness to the natural tissues, and may thus seem to increase their quantity." (*Lectures on Surgical Pathology*, vol. i.)

True hypertrophy of the lymphatic glands must then be looked upon as a morbid condition dependent on certain causes, and occasionally more or less closely allied to hypertrophies resulting from inflammatory action. And this appears the more probable, because such a condition oftentimes obtains as the result of the disturbed equilibrium from such causes as are known to give rise to mild inflammatory changes.

On examination of a gland thus moderately enlarged, nothing about its exterior will serve to distinguish it from the increase in size which results from other chronic action. On viewing the interior, however, the hypertrophy will be found to depend on an abnormal increase of its natural parenchyma. If the enlargement result solely from such a cause, neither the eye nor the lens will detect any marked trace of vascular derangement or destructive implication of the tubular arrangement of the gland. It is not till the affected gland has assumed considerable size, or met with certain implications, that any perceptible interruption can be traced involving the lymphatic portion. Acute inflammatory action, as has been already observed, seldom attacks glands in this altered condition, but a slow, tardy scrofulous suppuration, or even tuberculous deposition, not unfrequently leads to destruction. This I have

verified by *post mortem* examination ; and I entertain but little doubt that many so-called scrofulous or tuberculous glands consist, in reality, of certain degenerations of true hypertrophied ganglia.

General Treatment. In all diseases in which complication exists, prescribed forms of treatment must be more or less modified ; and this observation is particularly relevant as regards the therapeutical management of this special glandular affection. It has been stated that, in all probability, in the majority of cases in which this derangement occurs, it obtains as a result of certain causes which have an extra lymphatic origin ; and, therefore, before any hopeful treatment can be adopted, it is highly advisable that they should, if possible, be recognised. What these causes may be, it is often difficult to determine ; but frequently a decided departure from health will point to some impairment of the digestive, secretive, or absorptive functions. It must be allowed, I think, that this kind of glandular affection is generally met with in constitutions which commonly admit the development of strumous disease ; viz., the sanguine, phlegmatic, and lymphatic ; so that if in certain instances it appears to be but slightly, if at all, associated with well developed scrofula, still it must be ordinarily considered as in some way or other connected with a special diathesis. Believing that the simpler forms of the affection, when appearing in the external glands, although not appreciable in those of the mesentery and other internal structures, are dependent on systemic causes, I usually commence the treatment by regulating the proper action of the various viscera. This is best accomplished, when the *primæ viæ* are at fault, by unloading the bowels, and maintaining their proper action. Constipation is a very frequent accompaniment of glandular swellings, and it is astonishing to see how an alterative course of medicine is attended with almost immediate good effect, provided the disease has not been too long established. Mr. Abernethy

was in the habit of treating these cases with calomel ; but with what special views he used this powerful medicine does not clearly appear even from his own description. Although, as a rule, I do not resort to the administration of calomel in large and continuous doses, still there is no doubt that mild mercurial preparations are often of value, as the liver is generally torpid in its functions. For reasons already stated, I prefer small and repeated exhibitions of hydrargyrum cum cretâ in combination with compound rhubarb powder, or some alterative. To improve the tone of the digestive and assimilative powers is all important ; for, as long as these remain neglected, the proper action of the various organs cannot take place. Mineral acids in combination with bark, quinine, and iron, are the most available adjuncts for restoring a healthy tone. For the more immediate treatment—reduction—of the disease, iodine, bromine, liquor potassæ, and cod-liver oil have during the past quarter of a century taken the first rank ; and, if cure is to be obtained, perhaps, no specific remedies are more valuable. Iodine and bromine may be exhibited in one or more of the forms already described, or in any of those which will meet with further consideration. When speaking of the action of iodine on indurated glands from vascular derangement, it was stated that the administration of the drug was not always so rapid or certain in its effects as could be wished for ; and that not unfrequently disappointment followed even its most pertinacious use. This remark is even more applicable to the treatment by iodine of this form of glandular mischief than the last described ; for considerable experience has proved to me that even its very extended exhibition is oftentimes attended with failure. Various reasons may be assigned for this want of success ; but, whatever may be the correct one, it is more than probable that in the majority of cases of confirmed mischief, a hidden influence is at fault in keeping up the irritation, over which iodine has little or no control. In one instance, in particular, in which the constitution was saturated with iodine, little or no amendment or re-

duction in the gland swellings resulted. It may be asked—this important agent being oftentimes incapable of inducing resolution, or even arresting the further progress of the disease—what means should be adopted to procure amendment and cure? I fear even the most sanguine and experienced practitioner will readily admit that many cases, in which this form of glandular affection exists, are not really amenable to the treatment of any fixed medicinal means, and that the good to be expected is chiefly derivable from change of climate, and from the removal of those unwholesome influences to which the subject of the affection may be exposed. Rapid amendment in such cases, occurring especially among the poor, by this plan of rational treatment is frequently most marked. Much has been said and written on the direct advantage of sea-air and sea-bathing; and, while many excellent writers have been far too laudatory in their recommendation of these means, others have not sufficiently noticed the benefits which their employment often affords. Ample observation among both private and hospital patients at Margate, has assured me that immediate advantage is very frequently to be gained by a sea-side residence, and a free recourse to sea-bathing, provided it be not contraindicated by reason of certain complications of constitution and disease. If with these means treatment by iodine, cod-liver oil, and tonics is added, I believe, marked amendment and cure will oftentimes be obtained when but little hope was entertained from either ere change of climate was obtained. But, although a residence by the sea is often advantageous in the management of cases dependent on this kind of glandular disturbance, still it often happens that a less bracing and inland locality is more suitable. Individual cases must be managed according to circumstances; but, as a rule, I believe, a change of climate and residence is often expedient, and even necessary, when medicinal means solely employed have failed. It has already been hinted, that this form of glandular affection, when limited to the external lymphatic ganglia, after arriving

at a certain stage and becoming permanent, is frequently unaccompanied with any strongly marked evidences of disturbance of the general health. In fact, it is not rare to see individual instances in which not the slightest effect is produced on the system. I have lately been interested in one of this description, in which the glandular enlargement, especially of the cervical ganglia, has existed for years, and no perceptible effect has been produced on the constitution and vigour of the patient. The case has been under notice for a considerable period, and a large amount of iodine has been taken without having exercised any or little effect on the glandular system. This form of hypertrophy is more permanent when once established than other chronic enlargements, and frequently no perceptible changes are induced by the variations of seasons and temperatures. But, although this condition of hypertrophy is oftentimes comparatively harmless, still it is apt to progress to such an extent as to cause not only inconvenience but danger from mechanical causes. Moreover, fear is to be entertained that any subsequent complication may give rise to still more important lesions; for it has been noticed that more marked scrofulous and true tuberculous mischief is apt to arise, especially if the strumous diathesis be strongly portrayed: and it is on these grounds, if not on others, that such medicinal and general treatment should be adopted as is most likely not only to cure or amend the affection, but to prevent the occurrence of more distressing and dangerous complications.

Local Treatment. Although local treatment by means of certain applications has been highly extolled by many observant practitioners, still, I believe that a due consideration of the pathological changes that have induced an alteration in the condition of the affected glandular apparatus will at once show that much advantage is not, as a rule, to be hoped for from mere mechanical and therapeutical applications. When such means are, however, employed, either solely or with internally adminis-

tered medicines, it is customary to adopt the use of those agents which have already been and will presently be more fully considered; viz., blistering; paintings with iodine, bromine, and their salts in the forms of tinctures, etc.; frictions with various powders, ointments, and oils; and the constant application of various solutions containing mineral salts, etc. But much harm instead of good may arise by a too pertinacious use of one or more of these various means. I have not unfrequently seen cuticular and cellular mischief occasioned by a too persistent application of iodine; while little or no appreciable advantage has been derived, so far as diminution in the glandular derangement is concerned. When enlargement is dependent on plastic material, doubtless iodine, etc., topically applied, is of some value; but, judging from my own experience, I cannot recommend, with any great hope of success, the treatment of this special form of glandular hypertrophy by local discutients, absorptives, etc. Sometimes diminution in size of implicated glands of this nature does ensue from repeated and long continued topical applications of iodine, mercury, etc.; but then, I believe, the general system becomes more or less affected through absorption, as I have seen verified on more than one occasion.

Direct surgical treatment is, however, sometimes needed, as it may become expedient to remove one or more hypertrophied glands, which by reason of accumulation in size occasion not only deformity and inconvenience, but positive danger. Caustics and the knife are the two chief means in the hands of the surgeon to effect reduction or absolute removal. The application of caustics for such purpose has met with some consideration in previous pages, and I have only to reiterate what was then stated. Although a resort to caustics is, in general, I consider, not only erroneous, but decidedly bad practice, still there are occasions when no other agent will prove of like advantage. The way in which caustics act when employed as a means of destruction, is by causing inflammation and suppuration of the tissues with which they are in contact. Such changes are more

or less rapidly induced, in proportion to the agent employed; while the disturbance generated is in relation to the extent of local destruction and constitutional temperament. I have frequently known very serious results follow this plan of treatment, and I have rarely put it in practice for the removal of this form of glandular mischief.

When it is really expedient and necessary to take away one or more hypertrophied glands, the knife will be found the most certain, least painful, and efficient means at the disposal of the practical surgeon. Care must, however, be taken to select only such cases as are well marked for operative interference. When the gland-tumours are situated in close relation to large arterial and venous trunks, and nerves, extra judgment is required in advising and performing an operation; for experience has fully shewn that danger is apt to arise therefrom. An example of injudicious interference has been current since the days of Celsus; and there are few surgeons who cannot recall to recollection similar instances of bad practice. When circumstances are favourable, and removal well and carefully executed, success will, in general, attend direct and judicious surgical interference; for a slight scar will by the majority of patients, especially by those who take pride in the advantages of personal appearance, be deemed of less moment than an unsightly and irreducible gland-swelling.

CHAPTER IV.

TUBERCULOUS DISEASE OF THE EXTERNAL LYMPHATIC GLANDS.

IN the foregoing chapters have been considered two forms of glandular affections; one, the result of more or less subdued inflammation, termed by the French surgeons, *engorgements*; the other, the effect of a particular chronic increase or hypertrophy of the true parenchymatous glandular tissue. Both these conditions may obtain in all kinds of constitutions; but their occurrence in truly scrofulous individuals is marked by special phenomena indicative of a peculiar diathesis, which generally allow the surgeon to distinguish not only the nature, but oftentimes the cause and results of the diseased action.

So comparatively distinct is the line that can, in general, be drawn between various glandular affections, that little or no difficulty is encountered in describing under a separate heading a most frequent and destructive form of disease, depending on a true tuberculous manifestation. Hitherto—at least, in England—but slight practical distinction has been drawn between the different forms of glandular affections occurring in scrofulous subjects, so that many really benign conditions of the lymphatic system have oftentimes been indiscriminately, if not ignorantly, spoken of as truly tuberculous. Lebert was the first surgeon of eminence who attempted to define with any precision scrofulous and tuberculous diseases; and so apparent are many of his observations, that I have willingly acceded to some of his views and explanations. I have long ceased to regard every condition of idiopathically enlarged glands in decidedly scrofulous subjects as the result of tuber-

culous complication; for it will be remembered that in preceding chapters a considerable proportion of glandular swellings, even in highly scrofulous constitutions, were shown to be entirely independent of production by tubercle.

Tuberculous disease of the lymphatic glands may occur at almost any age. I have seen those externally seated involved at a very early period of life; while Oehler, Cruikshank, and others, have recorded instances of morbid states of the mesentery in the foetus greatly resembling ordinary tubercle.

It is not, however, till after the second year that tuberculous diseases generally manifest themselves, when the mortality arising therefrom is often truly appalling. At the Metropolitan Infirmary for Scrofulous Children at Margate, patients between the ages of three and sixteen years only are admitted, so that beyond the latter age, I am possessed of no very extended means of arriving even at an average appreciation of the number of deaths from tuberculous affections. M. Guersant, formerly of the Hôpital des Enfants Malades in Paris, has stated that in scrofulous children between these two ages tuberculous disease has been found in one or more parts of the body in at least two-thirds of the number of patients who have died in the institution. This proportion is certainly much in advance of any I can offer; for the deaths from various forms of scrofula at Margate among children are comparatively few, when compared with the high rate of mortality occurring in the crowded hospitals and unions of large cities.

Various statistics have been offered as to the frequency of tuberculous disease of the external glands in scrofulous children. Papavoine states that in the bodies of fifty scrofulous children which he examined, tubercle was found on twenty-six occasions invading to a greater or less extent the cervical ganglia. Louis says that in the bodies of scrofulous subjects over the age of fifteen years, the cervical glands were affected with tubercle in one-tenth of the cases which he examined.

My own conclusions allow me to verify the results of M. Papavoine; for I think it may be asserted, as a rule, that the development of tubercle in the lymphatic glands is a very early and frequent manifestation in the young scrofulous subject, especially when subjected to various depressing influences. Although the appearance of tubercle in the lymphatic system is by no means infrequent after the age of two to eighteen years, still it appears from my own statistics that it most usually occurs between the ages of six or eight years and twelve or fourteen years. It may invade the lymphatic ganglia as a specific and solitary affection, or as a secondary consequential development coexistent with similar manifestations in other parts of the body.

In young children it, perhaps, more often occurs without any previous appreciable association, except a well marked scrofulous constitution. On the other hand, although tubercle may not only be suspected but detected in other localities, yet the destructive form that it assumes when deposited in the glands is oftentimes the most formidable manifestation which has to be encountered. In youth such developments are more frequently associated with similar manifestations, especially in one or more of the internal organs of the body. Louis mentions that tuberculous disease seldom or never occurs in the external glands after the age of fifteen years without appearing in the lungs. This well known law, as it has been called by many English writers, is, however, I am convinced, one that is untenable without numerous exceptions. I have had considerable opportunities of observing cases which have proved the incorrectness of this deduction, and although I do not mean to avow that the association of glandular and pulmonary tuberculosis never coexists after the age of fifteen, still I cannot admit, so far as my own experience goes, that it is a compulsory and infallible, at least to all physical signs, combination. Cases have lately particularly impressed this fact on my mind, and, I believe, there are many whose opportunities of

observation being greater than my own, have arrived at the same conclusion.

On the other hand, it by no means follows that, because the lungs are seriously involved in tuberculous disease, the same morbid condition should be extended to the lymphatic ganglia. I have made particular inquiries from sources of large experience regarding this point, and I find that it is comparatively rare to see in the adult a tuberculous condition of the external lymphatic glands following the development of phthisis pulmonalis. My friends, Drs. Pollock, Cockle, and Webb, whose testimony is much to be valued, inform me that my deductions are in harmony with their own; while from a late work, by a well known and distinguished authority, I peruse the following observations, which tend to confirm my own convictions. "The external lymphatic system," writes this physician, "on the whole, rarely undergoes tuberculisation in the phthisical adult. An antagonism, not absolute but tolerably well marked, seems to exist between the external and internal tuberculising processes. In corroboration of this, I have known the cervical and axillary glands greatly enlarged in phthisical people rapidly fall to the natural size without suppuration or symptom of any kind, while pulmonary tuberculisation rapidly advanced." (*On Diseases of the Lungs*, Dr. Walshe, 3rd ed., 1860.)

Although the two forms of tuberculous manifestation—pulmonary and glandular—are not of frequent occurrence, still they do sometimes appear in concert. One of the most distressing cases of this description which has come under my notice is the following.

I was asked lately by my brother, Dr. William Price of Margate, to visit a girl, about nineteen years of age, who for years had been in a delicate state of health, and a sufferer from glandular swellings of the neck. At the time I saw the patient she was in the last stage of consumption, the right lung was filled with purulent matter, which was constantly coughed

up. In addition, the cervical glands on both sides were so enlarged as completely to mask the contour of the neck and shoulders. There was no doubt of their tuberculous character, for the pain, acute nature of the suffering, and the contents of some of the glands which had been opened, fully indicated the true type of the affection.

Under the age of fifteen, however, pulmonary plithisis frequently occurs in concert, or soon manifests itself, after recognition of glandular tuberculosis. Indeed, many of the deaths which have occurred at the Children's Hospital at Margate during the past six or eight years, have been mainly attributable to pulmonary complications, added to pre- or co-existing mischief of one or other portion of the lymphatic glandular apparatus.

Of all the lymphatic glands which are situated on or near the surface of the body, those occupying the region of the neck are most frequently affected with tubercle. Such a marked tendency has been explained in different ways, and various ingenious theories have been broached to prove what, even at first consideration, seems so apparent. We will not, however, stay to consider the positively asserted views of Henning, and the clearly expressed opinions of Hufeland, Cullen, Russell, Thompson, White, and numerous other intelligent writers on scrofula, but remain content with receiving with credence the fact that is every day corroborated.

Out of 113 instances of suppurating absorbent glands, apparently tuberculous, which I have tabulated, in 82 the glands situated in the neck were solely affected, while in the remaining 31 cases the glands of the axilla and groin were the seat of mischief, although, in the majority of examples, the cervical ganglia were likewise implicated. In 175 cases of tuberculous disease of the external glands given by Lebert, 108 are reported as being strictly confined to the cervical ganglia, while in almost all the remaining 67 instances, which included disease in other glands, those of the neck were likewise affected.

Tuberculous disease of the cervical glands is seldom in itself a fatal malady. It is astonishing to see how many grown-up individuals bear evidence of once extensive tuberculous mischief of the lymphatic ganglia. If we analyse carefully and discriminately the history of a large number of cases in which a tuberculous state of the glands externally situated had been the most severe complication, it will be found that comparatively slight mortality resulted therefrom, though very delicate and strongly marked scrofulous children were the sufferers. It is the tendency of Nature to restore the damage that has been committed by morbid processes when elimination of the local mischief has taken place, and hence it is that reparation and cicatrisation frequently so rapidly ensue when diseased action has ceased.

Great inconvenience and positive danger are, however, more or less frequent results of a tuberculous condition of the cervical ganglia, owing not only to the impediment they may occasion to the functions of deglutition, respiration, and circulation, but to the debilitating condition to which they expose the entire system. Andral has recorded an instance in which death resulted from the immediate effect of the presence of large masses of tuberculous glands in close relation with the windpipe, and out of the number of cases I have given, one child perished from the exhaustion and debility occasioned by the almost complete inclusion of the cervical glands in tubercular phthisis.

The lymphatic glands situated in various parts of the body, may be more intimately considered with regard to their susceptibility to tuberculous conditions.

Tuberculous Disease of the Cervical Glands.

It has already been observed that the glands situated in the region of the neck and face are more frequently the subjects of tuberculous disease than those occupying other positions. The more superficially seated of the cervical ganglia seem to ex-

hibit a greater tendency to diseased action than those more deeply placed, as was lately mentioned. The glands of the right and left side appear equally liable to take on tuberculous conditions; and it is seldom, in advanced stages of disease, that one side only is involved. Tuberculous deposits may invade only a single gland; but it is much more common to find a cluster, or even an entire chain, involved. Should one gland be alone included at an early period of the disease, it is more than probable that those in close relation will show a marked tendency, if not positive sympathy, and at length absolute diseased action. As already mentioned when speaking of the various kinds of chronic hypertrophies, tuberculous depositions may ensue in glands which have undergone enlargement both by inflammatory changes and non-vascular excitement. More frequently, however, the disease commences as a specific affection, and runs its course independently of other abnormal conditions. It may be that the appreciable tuberculous implication of a gland is a tedious process, or one of great rapidity. I have frequently watched cases in which glands known to be affected with tubercle have existed in a certain condition for years without showing any decided signs of extensive mischief; while, on the other hand, I have recorded instances in which suppuration or phthisis of cervical glands has run its course with astonishing rapidity. The size to which a single gland, cluster, or chain of ganglia, may attain, is variable. It may be that the enlargement before softening and suppuration occur is but trivial; at other times, it is very considerable; and I have seen many instances in which the gland-swellings arrived at great dimensions before any actual evidence existed of ulcerative and suppurative action; while not unfrequently I have found the increase in size but trivial when destruction had commenced. There is no direct explanation, as far as I am aware, that can be offered as to the reason why such variations should exist, beyond the known fact that age, constitutional and extraneous causes,

greatly modify all morbid actions. It may, however, be observed that I have much more frequently seen the cervical glands of sanguine individuals, whose hair in colour is from light or sandy to chesnut, red, and auburn, whose eyes are shades of blue or sickly green, and whose personal aspect betrays the tone and character of delicateness and weakness, obtain to greater dimensions than ganglia similarly affected in more phlegmatic and lymphatic temperaments.

Tuberculous deposition in the cervical glands is very commonly, especially in truly scrofulous children, associated with various diseased states of neighbouring parts which partake of a tuberculous or somewhat analogous condition; such, for instance, as affections of the scalp, lupoid eruptions and ulcerations, otorrhœa, ozæna, ophthalmia, etc. Not unfrequently more distant parts of the body, such as the bones and joints of the extremities, are accompaniments of the glandular mischief; while very commonly the portions of the lymphatic system situated within the chest and abdomen, as will be hereafter considered, are likewise included.

One of the worst cases of cervical glandular tuberculosis, associated with disease of the bones and joints, that I have seen, is now in the Children's Hospital at Margate. Many of the ganglia on both sides of the neck are in a suppurative state; while the right knee-joint, tibia, and ankle, are in a precarious condition. It is instructive to mark that various phases of tuberculous disease of the cervical glands, when not accompanied with any very distinctive signs of similar disease in glands situated within the abdomen or chest, are not unfrequently kept up and aggravated by some similar irritating form of mischief situated in bones or joints. With this fact I have long been conversant, and could mention numerous instances in which healing and cicatrisation of glands have ensued on the removal of the coexisting disease. In one case in which I excised the knee-joint, this feature was well shown; for, while

the child for years had been subject to glandular disease, he is now perfectly free.

With the deposition of tuberculous matter in cervical glands, there may result either slight constitutional shock or very grave disturbance. But it is not in general that very decided symptoms of sympathetic irritation manifest themselves till softening and inflammatory conditions obtain in the glandular parts. It is not then unusual to see the system much harassed with pain, restlessness, and hectic fever. In proportion to the diathesis of the patient, the amount of local implication, and state of the constitution, is the amount of general disturbance that ensues.

The occurrence of suppuration in tuberculous glands, associated with a weak and undermined constitution, is always to be looked upon as an unfavourable condition, although it is by such means that cure is oftentimes, at length, obtained.

The various states into which tubercle is apt to convert lymphatic glands will be more fully noticed when considering the pathological changes which commonly ensue. Before, however, closing this brief review of some of the principal features connected with a tuberculous state of the cervical glands, it may be well to remark that the few lymphatic glands associated with the head and face are likewise the subjects of tuberculous manifestations. The solitary gland placed in front of the parotid is very commonly affected; and I name this particularly, as I have known it in a diseased condition, such as we are now considering, mistaken for a distinct tumour.

Tuberculous Disease of the Axillary Glands.

Next in frequency to the cervical ganglia, those occupying the region of the armpit exhibit a tendency to be involved in tuberculous inflammations. But these glands are much less commonly affected than is generally imagined; and, although they are more often involved when the tuberculous degeneration is well marked in the cervical and other portions of the

lymphatic system, still it is somewhat unusual to find them included when those of the neck remain free. This remark will, perhaps, be of greater moment by quoting statistical results, as offered by Lebert. This distinguished author, in one hundred and fifty-eight cases of tuberculous glands which he collected, states that in eight only were the axillary glands alone affected. Louis, moreover, mentions that in eighty cases of tuberculous disease, he found the axillary glands involved on only one occasion. When these glands are included, it appears from my own statistics that a definite exciting cause is often necessary to predispose them to assume a tuberculous condition. From position, the axilla is but slightly exposed to vicissitudes of temperature, but to strains and injuries it is more susceptible. Hence it is that, in seeking for statistics of tuberculous disease of the glands of this region, it is usual to inquire, when meeting with cases, whether injury has been sustained. This necessity is well illustrated in the case of a scrofulous looking man who was some time since under my care at the Great Northern Hospital, who, when one day at work, sprained his right arm. Irritation of the axillary glands followed, and, in the course of a few weeks, three or four of the glands had assumed all the appearance of tuberculous induration. In the course of time, these swellings softened, and eventually discharged true tuberculous pus, mingled with shreds of unhealthy looking scrofulous lymph. Cicatrisation followed; but three of the glands were completely destroyed.

The size to which tuberculous enlargements of these glands may obtain is variable, and dependent on such circumstances as already mentioned when speaking of like disease of the cervical ganglia. The loose way in which they are associated, and the redundancy of cellular tissue in which they lie, enable considerable increase in size to be attained before any very great pain is experienced; but, as a rule, the extent to which en-

largement arrives is not great ere resolution or destruction ensues.

It has been stated by a well known writer and pathologist, that "tubercle and cancer are incompatible—the one excludes the others" (*A Course of Lectures on General Pathology*, by John Simon, F.R.S.) I am induced to give an example in which tubercle involved the lymphatic glands of the right axilla, between eighteen months and two years after removal of the right breast, which was affected with cancer, because, until lately, the above stated doctrine has been generally looked upon as infallible.

The patient in whom this somewhat unusual condition occurred was a lady, a patient of Mr. Fergusson, whose cancerous breast I assisted this distinguished surgeon to remove more than six years since. The axillary glands at this time were to all appearance intact; but, about eighteen months or two years afterwards, they had attained a large size; and, as it was feared that they were in a cancerous condition, an operation was resorted to. On placing portions of the removed parts under the microscope, a true tuberculous degeneration was detected. Cases of a somewhat similar character have lately been published; and one of great interest was recorded a short time since in the *Medical Times and Gazette* by my friend and former colleague, Dr. Coote.

Tuberculous Disease of the Inguinal Glands.

It is comparatively seldom that these glands are implicated with tubercle, except under certain conditions. I have seen but few instances in which tuberculosis occurred as a solitary affection, or unconnected with any similar manifestation in other parts. The following is an instance in which, however, one or more of the glands of the right groin were involved with tubercle after a severe attack of low fever. The patient was a gentleman, about twenty years of age, who consulted me last

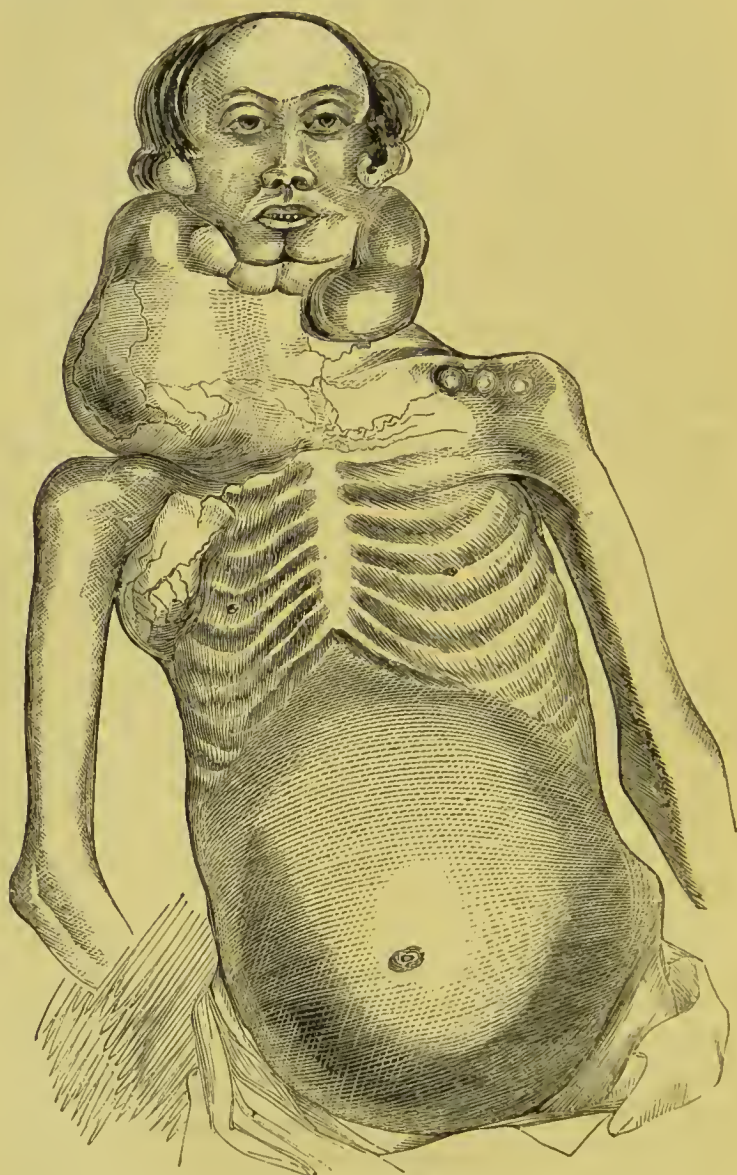
summer regarding a tumour in the right groin. It had made its appearance shortly after convalescence from a protracted low fever. It passed through the various destructive changes of tuberculous inflammation, etc.; and cure was only effected by healing up the sinuses which had been formed between the cavity of the glands and the integument. The discharge from the glandular swellings presented all the characteristics of tuberculous matter. This patient exhibited a strong tendency to phthisis.

The comparative infrequency of tuberculosis of these glands is, perhaps, not generally admitted; for abscesses and ulcerations in the neighbourhood of the groin are of common occurrence, and care must be taken that they be not mistaken for true tuberculous destruction commencing in the proper glandular structure. It may be mentioned, as confirmatory of my own views on this point, that neither Louis nor Lebert mention a single instance of tuberculous inguinal glands.

Although the neck, axilla, and groin, are the principal localities in which lymphatic glands are found near the surface of the body, still there are other parts in which they are situated. In relation with the female breast, at the bend of the elbow, on the forearm, in the popliteal space, etc., are scattered a few absorbent glands; but suffice it to say, that their implication with tubercle is comparatively rare, so far as I am aware, except it be those situated in the front of the chest, which are occasionally, in concert with the cervical ganglia, involved.

The extent to which the externally situated lymphatic glands may become diseased, as was lately described, is well seen in the accompanying woodcut, which represents a patient, a lad, who was sometime ago in King's College Hospital, under the care of Mr. Partridge. The extreme emaciation and rapid enlargement of the superficial absorbent ganglia, including

those of the abdomen, was more marked than in any other patient I have met with, and soon led to a fatal termination.



Recognition. Lymphatic glands involved with tubercle may, at an early period, oftentimes be readily mistaken for the more benign kinds of enlargement already described. As a rule, some increase in size takes place in an absorbent gland prior to the positive deposition of tuberculous matter; and hence it is that very great uncertainty is apt to exist so long as the glandular tumour remains entire. It has been too much the custom among many practitioners, to term every enlarged gland in individuals presenting a peculiar condition of constitution, tuberculous or scrofulous. Both these terms have thus frequently, and with but little consideration, been used synonymously. A very slight acquaintance, however, with the true pathological changes that ensue in really tuberculous glands, and in those which are not affected with tubercle, though occurring in highly scrofulous subjects, will serve to show that the expressions tuberculous and scrofulous are not, strictly speaking, convertible terms. The term scrofulous may be applied to disease of a gland in which tubercle plays the chief part, but the word tuberculous cannot with the same propriety be used to denote the nature and characters of every so-called scrofulous gland which, although appearing in what is termed a tuberculous subject, is in no way dependent for its morbid alteration on true tuberculous deposition. It is exceedingly difficult clearly to define the use and correct meaning of expressions which have inadvertently, though unfortunately, crept into general requisition; but the judicious practitioner will at once see that a broad practical distinction is often necessary and very advantageous.

There is no manipulative distinction, so far as I am aware, whereby the earlier stages of tuberculous mischief may be distinguished from other forms of glandular enlargement. It has already been shown that glands implicated with tubercle either slowly or rapidly pass through various destructive changes, and that such alterations are accompanied with symptoms more or less dissimilar to those in which tuberculous invasion plays no

part. When softening and suppuration obtain, and certain indications are manifested, which are usually associated with tuberculous diseases, then the doubt which remains is greatly diminished, and little, if any further difficulty prevents the correct recognition of the nature of the affection. Added to the local mischief, a more or less general constitutional disturbance exists, which oftentimes enables the surgeon at once to distinguish the true nature of the enlargement.

Although tuberculous glands in an incipient state are apt to be confounded with simple hypertrophies and *engorgements*, still there are certain morbid conditions for which they may be mistaken. Cystic tumours, especially about the lower jaw; medullary affections of the absorbent glands; fatty and fibrous tumours, and chronic abscesses, are among the abnormal formations which occasionally embarrass the surgeon in the ready recognition of tuberculous glands. I have frequently known cysts containing atheromatous, steatomatous, and other secretions, mistaken for tuberculous glands; and so close is the similarity exhibited, both by fibrous and other tumours, that great care is sometimes needful in forming a correct diagnosis. Chronic abscesses situated in the region of the neck not uncommonly assume appearances nearly identical with those exhibited by absorbent glands in an occult stage of tuberculous disease. I have known intelligent surgeons proceed to the removal of tumours supposed to be glandular, but which, on the first application of the knife, have proved to be of a totally different character. Not uncommonly, the only glands which are found tuberculous are those situated in close relation to the under and front surface of the lower jaw; and within the past few days, I have seen a surgeon proceed to the removal of a single tuberculous gland, situated in the centre line of the neck, under the impression that it was a fatty tumour. Such a mistake may, however, oftentimes be avoided by noticing whether neighbouring glands are similarly affected, or whether unmistakable mischief of pre-existing disease—as old scars and

deformities—can be detected. A very marked similarity is sometimes seen to exist between tuberculous and medullary mischief in absorbent glands.

Some years ago, in Mr. Partridge's wards in King's College Hospital, I saw a scrofulous but otherwise healthy, though pale-looking man, with a cluster of enlarged cervical glands greatly resembling tuberculous enlargements. The diagnosis was, however, uncertain, and continued so for some time, but eventually unequivocal symptoms of malignancy announced the terrible nature of the complaint.

A few days since, I was requested when at Margate to see, in consultation with my brother Dr. W. Price, an elderly female, who had a tumour of about the size of a walnut, situated over the sternal portion of the clavicle. Ulceration had commenced, and had softened the growth. It presented very closely the aspect of malignancy; but on examining her neck, I discovered various scars which marked the previous existence of tuberculous mischief in many of the absorbent glands.

In arriving at a diagnostic distinction in instances in which dubious grounds exist, it will be advisable always to recollect that there are generally certain peculiarities which particularly distinguish tuberculous invasion of lymphatic glands from all other conditions; and, although they may not be constantly present and prominent, still they are frequently so.

I allude particularly to the special diatheses in which glandular tuberculosis is apt to manifest itself, the sympathy of other and still more important organs, and to the wholesale way in which, if I may be allowed the expression, the diseased action invades the glandular arrangement of particular regions. And this brings me to make a few observations on a point which has not, as yet, in these pages, obtained any special consideration.

With the older authors, the maladies of syphilis and scrofula were supposed to bear a very near relationship, the latter disease being considered but a modified condition of the former.

Indeed, they were often looked upon as one and the same affection, and like remedies were used for their treatment. The erroneous conclusions of those who held this doctrine have been fully exposed by modern research and experience; and, although hereditary or acquired syphilis may exert a more or less direct influence on the acquisition, or, at least, on the development, of scrofula, still it is now generally admitted that a very imperfect resemblance exists between them. The similitude which exists between lymphatic glands affected by these two diseases is, however, the only point of immediate importance to the subject under consideration. I have myself never met with an instance of truly tuberculous lymphatic glandular disease which has, in any decided manner, resembled syphilitic enlargement; although the venereal poison may occasion such disturbance in one or more parts of the absorbent system as to cause doubt as to the exact nature of the mischief.

When considering the treatment of tuberculous glands, it will be mentioned how necessary it occasionally is to inquire if any marked syphilitic symptoms complicate those of scrofula, so that both may be combated with advantage.

Pathological Changes. Tubercle may occur in the lymphatic glands under two distinct forms, either as semitransparent, grey, crude granulations, or as more or less yellowish lardaceous material, similar to that which so constantly involves the lungs. Although grey, semitransparent, crude tubercle is found affecting the structure of lymphatic glands, still it is of very exceptional existence. Louis states that, in all his examinations of tuberculous glands, he never once met with it, though Rokitsky admits that it may coexist with yellow tubercle, which is, *par excellence*, the form which invades these special organs. I think, I have never myself recognised grey tubercle alone, or even mingled with the yellow, in any of the lymphatic glands I have examined; and, from the observations of those

still more experienced, I am inclined to believe that its presence is seldom to be determined.

When tubercle invades the structure of lymphatic glands, it is, as just mentioned, in that form identical with the yellow caseous deposit formed in the lungs of phthisical patients. In most structures, this kind of tubercle presents itself as *tubera* or rounded bodies; but, as Mr. Simon has truly observed, tubercular deposit in the lymphatic glands does not show itself at first in a spherical or tuberous form.

It may be seen under various phases, according to the size and nature of the gland-organ it involves, the condition of the individual in whom it occurs, the length of time it has existed, and the influences to which it has been exposed. At an early period of its existence, more or less of the glandular structure appears to be infiltrated or patched with the foreign material in the shape of a yellow, or yellowish-grey, cheesy, half-dry substance, which, to a greater or less extent, leads to destruction of the organ.

Although the word *infiltration* has been used as descriptive of the manner in which tubercle involves the glandular structure, yet at a later period, provided unhealthy action continues, the morbid material so completely transforms the natural tissue that the term inadequately conveys the process that takes place. But, beside the gland-tissue immediately implicated by the deposit, that in close relation with it oftentimes assumes a more or less altered condition. Slight vascular excitement seems to pervade the still healthy structure, preparatory, as it were, to admitting the deposition of the tuberculous substance. Thus, on splitting open a gland known to be in an advancing tuberculous state, the proper structure will be found more or less implicated in various places. Sometimes the foreign material is merely seen scattered about in lines or patches; on other occasions, small patches are extending by a more extensive grouping; while occasionally nearly the entire gland

is plugged up by the masses which appear to be undergoing a general fusion.

Prior to the deposition of tubercle in a previously healthy gland, some slight enlargement generally ensues; but it is not till a later period that the size of the organ is very perceptibly increased. Enlargement may depend either on the swelling of the true glandular tissue, the result of direct irritation, or from real accession of bulk by reason of the tuberculous formation. Frequently such enlargement is dependent on both circumstances combined; for otherwise it would be difficult to account for the extraordinary size to which the lymphatic ganglia thus affected sometimes attain. The true tissue of an implicated gland is frequently so involved, as the disease advances, as to be entirely displaced by the morbid exudation, and so form around it merely a distinct capsule or zone, which becomes in turn destroyed as more extensive implication ensues. Tubercle deposited in the form thus described is susceptible of various transformations, which may be included under the following heads: withering, calcification or cretification, and softening, with subsequent liquefaction.

Under certain conditions, a special alteration takes place in the tuberculous deposition of lymphatic glands, which consists of what has been termed *withering*, or a conversion of the foreign material into a shrunken, dry, shrivelled mass. Such a change has been considered by some authorities to have occurred in instances in which iodine has failed completely to reduce the glandular enlargement which has been supposed to accrue from tuberculous deposition. Such a process is, however, more frequently seen taking place in the metamorphosis of grey tubercle, which, as before mentioned, is of comparatively infrequent occurrence in the lymphatic system.

Calcification or cretification occasionally leads to incomplete resolution of tuberculous glands; but it is uncommon to see such change occur in those glands which have an external

or superficial situation, although a more or less gritty condition is sometimes to be observed. Cretification or mere ossification, as is well exemplified in several preparations in the Museum of the Royal College of Surgeons and various metropolitan hospital museums, is much more frequently seen taking place in the bronchial and mesenteric ganglia.

Among one or two isolated examples of calcification of tuberculous deposit occurring in superficial absorbent glands, I find mentioned in my notebook the case of a gentleman who has had one or two of the lymphatic glands situated beneath the base of the lower jaw on either side involved by tubercle at various periods during the past five or six years. The glands on the right side were first affected, and, after enlarging, ulcerating, and suppurating for some time, gradually became destroyed, but not till numerous portions of a chalk-like substance had come away, mingled with the discharge. In the course of the time mentioned, the glands on the other side became similarly destroyed. But this is almost a solitary case, and it is seldom that the surgeon is able to record such a definite one. Lebert mentions but two; and Baudelocque only one, and in this instance the glands so involved were situated in the armpit.

Instances of complete osseous transformation of cervical glands in a tuberculous state have been occasionally recorded, but I have never seen a case out of many hundred examples of glandular tuberculosis which have fallen under my notice.*

By far the most common form of alteration that ensues in tuberculous absorbent glands situated near the surface of the body is softening, ending in liquefaction, suppuration, or phthisis, as it is called by some authors. Experience teaches that, in the majority of cases in which the disease is severely

* MM. Henry and Gmelin found that the cretaceous substance into which tuberculous matter of the lungs and lymphatic ganglia degenerates to be composed of carbonate and phosphate of lime, phosphate of ammonia and magnesia, and some animal matter.

marked, the general health bad, and the constitutional powers low, by reason of indifferent and scanty supply of diet and exposure to vicissitudes of temperature, there exists an especial tendency to this kind of destruction. In one hundred and forty tabulated cases of apparently tuberculous disease of the cervical glands which occurred in patients up to the age of sixteen years, at the Children's Infirmary, at Margate, no less than eighty-two cases suppurated; and it is probable that, had the remaining fifty-eight continued under observation for several months longer than they did, ulceration and suppuration would, in a certain number, have supervened. At any period after the deposition of tubercle, this process may commence; but it is generally protracted; and sometimes months, and even years, elapse before it exhibits a tendency to commence. I have, however, seen instances in which rapid destruction ensued, by reason of softening and liquefaction of the tuberculous matter, just as is sometimes met with in cases of rapid, or what is vulgarly known as "galloping", consumption. Softening of a tuberculous mass usually commences near its centre, provided no inflammatory or destructive changes are taking place in tissues bordering its margins. The process and its subsequent stages are thus described by Mr. Paget: "In the proper softening of tubercle, one sees its central part become first soft, so that, when cut across, it looks cracked and crumbling, and may be pressed away from the surrounding firmer part, leaving a little central cavity. In further stage of degeneration, it becomes liquid, like thin pus, with flakes or grumous particles in a pale yellowish turbid fluid; and as the change makes progress, the whole tuberculous mass may be reduced to the same liquid state." (*Op. cit.*, vol. ii.)

Such is the process that usually takes place; but it is often modified. The softening and liquefaction may be partial, affecting merely a single island of tuberculous matter, and not reaching to other isolated patches; or, so soon as liquefaction has commenced, the fluid portion of the softened mass may be

absorbed with such soluble products as are held in solution, the insoluble parts being left as foreign material in a more or less oily, chalky, and cheesy condition. Should such be the case, it is probable that the affected gland, with its coverings and connecting tissues, will show but slight signs of irritation or inflammation, at least, not sufficient to endanger ulceration and suppuration.

More frequently, however, by the destructive processes that ensue, the affected gland is converted into a more or less complete abscess. Coincident or somewhat subsequent to this conversion, are certain alterations in the tissues situated external to the diseased gland. The cellular bed in which it reposes shows signs of irritation and inflammation, which are soon propagated to the adjacent skin. Adhesions between the tegumentary, cellular, and glandular tissues, now ensue, accompanied by a more or less general destructive action, which eventually admits of thinning and perforation, so as to allow the escape of the liquefied contents of the destroyed gland.

The various progressive steps of cellular and tegumentary inclusion have been well described by the late Mr. William Goodlad, who paid great attention to the subject (*On the Diseases of the Absorbent System, etc.*: 1814). The rapidity with which the structures adjacent to the affected gland are involved varies in accordance with the amount and character of the glandular mischief. Sometimes it is exceedingly rapid; at other times, and more frequently, slow, but steadily progressive.

Ulceration, or the natural mode of allowing communication between the external tissues and the affected gland, may take place in two distinct ways, either at several points on the surface, or by the formation of a large ulcerative opening at that part in which the covering textures have become thinnest. The former process is the one usually observed in

eases in which the disease has been of a decided chronic and tardy character, although it may occur when the morbid action has been more rapid and decisive, as is well observed in a case of a patient, a boy, aged sixteen years, under my care at the Blenheim Free Dispensary. The glands, five or six in number, on both sides of his neck, became suddenly enormously enlarged, and, after remaining so for about six weeks, showed symptoms of destructive inflammation; and within a few days rapid ulceration took place in the greater proportion at various points on the surface, which admitted the oozing out of a thin grumous-looking semipurulent fluid, with shreds of tenacious lymph.

When a larger portion of the integument is destroyed, the constitutional and local disturbance is generally much greater. I have frequently seen the most unhealthy-looking sores formed in this way, which have not healed till the entire diseased gland has been removed, and appropriate remedies applied, with renovation of the general health.

The recognition of the discharged contents of a suspected tuberculous gland is not always so clear as to enable the pathologist to decide as to the positive existence of tuberculous or merely simply modified inflammatory products. The analogy between these morbid productions is often so strong that even microscopic aid is sometimes insufficient to distinguish them; while discriminative recognition of the degenerative forms of scrofulous lymph is still more difficult. Tuberculous matter from the cervical glands has been frequently examined chemically. Its elementary components consist of carbon, hydrogen, nitrogen, and oxygen, which exist, according to M. Scherer, in the following proportions:— C^{46} , H^{78} , N^{12} , O^{14} . (*Chemische und Microscopische Untersuchungen zur Pathologie*. Heidelberg: 1847.)

Tuberculous matter examined quantitatively by MM. Lombard and Thénard gave the following results:—

| | |
|-------------------------|------------------|
| Animal Matter | 98.25 |
| Muriate of Soda | } 1.75 |
| Phosphate of Lime | |
| Carbonate of Lime | |
| Iron | Traces |
| | <hr/> 100.00 |

This analysis must not, however, be looked upon as very satisfactory, and exhibiting the true chemical composition of tubercle in its various transformations. It is only an approximate rendering of the components of crude tubercle. The animal matter, which forms by far the largest proportion of tuberculous deposit, consists of fibrine, albumen, and gelatine, in varying proportions, the former and latter being generally in greater quantity.

The microscopical analysis of glandular tubercle is almost analogous with that occurring in the lungs. If a portion of ordinary yellow tuberculous deposit be placed under the lens, more or less granular matter, mingled with molecular oil, will be seen. Considerable quantities of imperfectly formed exudation-cells, of various shapes, more or less irregularly developed, will be detected in the basis-substance, mingled with nuclei or cytoblasts of different forms and conditions.

The above description is well illustrated in the beautiful drawings of Schröder Van der Kolk. This account merely, however, refers to tuberculous deposit as it is found in glands ere it undergoes various transformations and alterations; for there will then be discovered fresh conditions, in accordance with the nature and character of the metamorphosis.

Before adverting to the ulcerations which occur in connexion with suppuration of tuberculous glands, it may be well to give passing consideration to the liability possessed by already implicated glands to assume a tuberculous condition. When speaking of enlargement of lymphatic ganglia through simple inflammatory changes, it was remarked, that, not unfrequently, such a state was rendered more serious by

reason of a subsequent development of tubercle. I have now before me a specimen illustrating this susceptibility. The gland is from the cervical region, and was removed from a female, on account of the pain and disfigurement it occasioned. It existed for some years. On opening it after its removal, a beautiful illustration of tuberculous deposits was afforded. The inflamed condition of the altered structure of the gland in relation with the tubercle, and the ulcerated spots which the foreign material had caused, by reason of its deposition creating irritation, etc., was easily traced. I have seen several similar specimens, but in no other were these various changes so well displayed.

The accompanying woodcut shows, as far as a wood-engraving can, the appearances presented by the tuberculous matter infiltrated through the gland.



There is but little doubt that, in a certain proportion of instances in which tubercle involves lymphatic glands, the primary mischief has chiefly consisted in chronic hypertrophy from vascular derangement, and that eventually a more precise morbid action has obtained, in the shape of tuberculous invasion, owing to constitutional and extraneous causes. It is also more than probable that many glands hypertrophied from an excessive accumulation of parenchyma, independent of vascular excitement, in truly scrofulous and eventually tuberculous subjects, become implicated with tubercle in the same way; or

else how is it that such hitherto permanent glandular swellings disappear very commonly by unexpected suppuration, presenting all the appearances of tuberculous destruction?

Ulcerations connected with Scrofulous and Tuberculous Glands.

It has already been observed, that when a tuberculous gland has so far progressed towards suppurative destruction that a retention of its contents becomes impossible, Nature provides an outlet for the pent-up material, by admitting an extension of the morbid process in the covering tissues. This is recognised under the term *ulceration*; and the manner in which it proceeds has been briefly considered. The two different ways in which it obtains have also been noticed, and it now remains only to remark on the nature of such ulcerations.

When a tuberculous gland has been eaten into or opened by the process of ulceration, provided the material it contains be ready for elimination, and the abscess is thoroughly emptied, contraction gradually ensues; cicatrisation soon, under favourable circumstances, follows; and a slight scar, partaking more or less of a so-called scrofulous character, alone remains to mark the mischief that has taken place. Although, very frequently, Nature extends a helping hand to afford removal of the pent-up material of a destroyed gland, yet her well intentioned motives are frequently accompanied, or at least followed, by results which give rise to trouble, suffering, and deformity. In such instances are established those thick, indurated, unhealthy looking ulcerations, which are, unfortunately, of such common occurrence.

When a specific indurated ulcer forms in relation with a tuberculous gland, the following processes occur. So long as a lymphatic gland continues in any way implicated with tuberculous deposit, and only partially destroyed, and its contents eliminated by means of the ulcerated exit that has formed, it is probable

that a more or less patent communication will exist between the integument and the remaining gland-cavity, if contraction and healing do not take place, by reason of the cessation of all morbid action. At first, the ulcerated opening will usually appear as a more or less direct communication with the gland; the margins not presenting, perhaps, any very unusual appearance. By degrees, however, they become thickened and indurated, and rise above the surface of the integument to the height of the one-thirty-second, the one-eighth, or even the one-fourth of an inch; and proportionably increase in breadth. If of long standing, they assume a greyish, purplish, or even dark brownish colour; the tint being, I have found, much influenced by the special diathesis of the patient and the influence of extraneous causes. To the touch, they are flabby, or more or less hard. When their margins are irritated, they exude a peculiar sanious discharge, and, according to the amount of local disturbance, exhibit more or less inflammatory tendencies. Sometimes, however, instead of showing any vascular excitement, they remain livid, torpid, and cold. It may be that, during intervals of cessation of elimination from the still suppurating cavity, an effort has been made to close the ulcerated opening or openings; and that the overlapping, pale, unhealthy edges, have become united. So slight, however, is the bond of union between the flabby lips, that a free communication is soon restored for the evacuation of the enclosed material. These thickened and indurated margins are very commonly of such rapid growth that they bridge over a lazy suppurating gland, and, still increasing in size, admit within themselves ulcerating and suppurating processes. I have frequently seen this; and, I believe, it is a more common cause of additional trouble than is generally imagined. When several glands, a cluster, or even an entire chain, are involved in tuberculous destruction, a series of these unsightly, oftentimes painful, and troublesome indurated ulcerations of the integument, may occur. I have over and over again seen the most

distressing instances; and, in one wretched object I had for a very long time under treatment, there was scarcely more than a few inches of sound skin from the chin to the second ribs, by reason of the crowding together of these painful and tedious ulcerations. I have mentioned pain as a distinguishing feature of this condition. It is oftentimes, however, slight; but occasionally it is very severe, especially at those periods when fresh disturbance is lighted up from various causes.

For months, or even years, this condition may continue; but at length morbid action ceases in the deeper seated parts, the health improves, the vital powers are renovated, and the blood regains a more normal condition. Gradually an improved state of the general system allows healthy action to take place in the diseased integument, and slowly the indurated sores disappear, and cicatrisation closes the seat of so much mischief. This is accomplished in various ways, dependent on the extent of mischief, the tone of the general system, and the treatment which has been adopted. The processes of destruction and repair are hand in hand at work. Ulceration, suppuration, absorption, granulation, etc., combined, at length, lead to contraction and cicatrisation. The breach of continuity between isolated portions of healthy skin is again restored, and the patient is rid of a painful and distressing affection, although in the comparatively perfect reparation that has taken place, a lasting mark remains. Imperfectly as the above description conveys the general characters of such ulcerations, still there are various features connected with their existence that have not been alluded to, but which will be touched upon when adverting to the treatment that is required in the different stages of the affection. The cicatrices that result from the healing of such ulcerations have specific characters. They are generally furrowed, wrinkled, bridled, or puckered. They vary in size according to the amount of mischief that has existed, and the way in which resolution has taken place. Sometimes they present a very peculiar appearance. On one or

more of the bridles, or at the bottom of a pit formed by arches of skin thrown across from one part of the cicatrix to another, often exist small buttons, or threads of integument, surmounted with a black spot, which appears to be an abnormal secretion from an altered follicle. Closely allied in appearance are some of the slighter cicatrices after burns, especially on the face and neck. Nature having restored the damage committed by disease, seems intent on lavishing her powers of reparation to an almost unnecessary degree, and thereby giving occasion to art to undo what she has so generously performed. Before quitting the subject of ulcerations of the integument in relation with tuberculous glands, it may be well to remark that although it is not an ascertained fact, yet, in all probability, these morbid productions partake more or less intimately of the nature of tuberculous formations and destructions. Though, I believe, the microscope has not definitely settled the point, still from the analogy they present to the tuberculous ulcerations of mucous tissues, it is but fair to view them in this pathological light.

General Treatment. From the earliest times, tuberculous conditions of the lymphatic glands—the true scrofulous glands of both ancient and modern writers—have obtained every kind of treatment which art could suggest. It is needless to recapitulate the various *specifics* used by the fathers of medicine, and venerated through a long series of years; and, although the majority have been dismissed from our modern *Pharmacopœia*, still one is almost inclined to believe that, from persistent use and recommendation, rare virtues were really found in them. There is, perhaps, no subject in medicine which calls forth our ridicule so much as the comprehensive treatment of scrofulous affections by the older physicians and surgeons of all civilised nations. How vainly do we endeavour to suppress a smile when reading the long list of *specifics* which many an ancient writer describes with most un-

wavering faith; and how that smile is turned into laughter when, in still later times, we find that our own countrymen were not behindhand in awarding (as the courtly John of Gaddesden, of *Rosa Anglica* fame, has recorded) to the excrement of doves and the blood of weasels an excellent virtue over scrofulous sores, notwithstanding their inferiority to the efficacy of the royal touch! Through centuries, when learning and science in other branches were fast improving, the same superstitious ignorance directed the skill and practice of many (for that time) excellent physicians; and it is in vain we look for any really definite and sensible employment of medicinal means in the treatment of scrofulous affections, till Wiseman, deploring the want of accurate knowledge on the subject, wrote his celebrated treatise on *The Struma or King's Evil*, in the reign of our Charles II. From this period, physicians and surgeons seemed to vie with one another in rendering the treatment of the disease as scientific and simple as possible; so that at the present time it may be justly said that, in the hands of educated men, there is no affection of common occurrence which meets with more skilful management.

The general treatment required in the management of cases of tuberculous disease of the external lymphatic glands may be thus considered: firstly, in giving due attention to what may be called the natural requirements of bodily health, such as good and nutritious nourishment, pure and fresh air, combined with light, and the enjoyment of healthy exercise; secondly, in the administration of certain medicines.

Tuberculous disease of the external absorbent glands has already been shown to occur in individuals in whom the bodily powers are low, or affected by certain peculiarities which render them more than ordinarily susceptible to various kinds of diseased action; and hence, proper attention to the natural requirements of health, and the administration of certain efficacious medicines, often tend very greatly to improve and renovate impaired conditions of constitution.

My own observations lead me to believe that the occurrence of glandular tuberculosis is most intimately associated with depraved states of the general powers; and I am convinced that, in a very large proportion of cases, the earliest manifestation can be traced to a period in the life of the patient when an insufficient diet and imperfect sanitary comforts formed the meagre supports of a frame which, perchance, had already sown within it the seeds of hereditary tendency to mischief. Dr. Tyler Smith, in his work on *Scrofula*, has well insisted on this point; while the practical researches of Lugol, Baudelocque, Guersant, Hufeland, Phillips, Lebert, etc., have likewise corroborated what, on very slight consideration, appears so apparent.

At the Children's Hospital at Margate, many of the little patients, when admitted, are the subjects of both incipient and advanced tuberculous disease of the lymphatic glands; and oftentimes they are in such a low and impoverished state that it is astonishing not to find still worse forms of scrofula than are generally seen. These children are rapidly improved, and rendered far less susceptible of continued and fresh attacks of disease, by a liberal and sustaining diet; and while, doubtless, improvement is in some way due to the medicinal means that are employed, still I am persuaded that the greater amount of good is effected by a proper allowance of those resources which Nature has provided for revivifying the flagging powers of a worn and distressed constitution.

In addition, it is all important that, besides good and nutritious diet, pure, fresh, and invigorating air, with well lighted and ventilated apartments, should be afforded to scrofulous patients, and especially to those who are the subjects of direct tuberculous conditions of the glands and other organs. I cannot, while endeavouring to impress most strongly the necessity of due attention to the use of natural and sanitary measures, as taught me by a large experience in the treatment of all kinds of scrofulous maladies, avoid quoting from Dr. Smith's valu-

able work the following:—"In the place referred to (a union workhouse in Kent), the parish surgeon reported that, on the 29th April, 1841, there were then in the house seventy-eight boys and ninety-four girls; and that all the seventy-eight boys had enlargement of the neck, and forty-two had likewise goitre; that of the girls and infants, ninety-one had enlarged glands at the back of the neck, and forty-three also goitre. . . . The diet in these cases had been bread and cheese for dinner four times a week; suet pudding and vegetables two days, on the Poor-law scale; and meat only one day of the week for dinner, and then the usual stinted workhouse quantity. Besides this scanty and innutritious food, which may, for *growing children*, be truly called a scrofulous diet, the dormitories were ill ventilated and excessively crowded." (P. 39.)

In contrast with this scale of diet, I submit that in use by Mr. Weekley, the excellent and kind hearted manager of the Children's Infirmary at Margate, for those patients who are convalescent, and able to enjoy the out-door advantages of this well conducted establishment; while every necessary is granted to those who require more important medical and surgical treatment.

*Diet List of the Metropolitan Infirmary for Scrofulous
Children at Margate.*

FROM FIVE TO TEN YEARS OF AGE.

| Breakfast. | Dinner. | Supper. |
|---|--|---|
| Four or five oz. bread and butter, and $\frac{1}{4}$ -pint milk in water. | Three or four oz. roast or boiled meat, with $\frac{1}{2}$ -lb. potatoes, or potatoes and bread, or other vegetables, $\frac{1}{4}$ -pint London porter,* on Sunday, Monday, Tuesday, Thursday, and Friday. Eight or twelve oz. of either rice or currant pudding, on Wednesday and Saturday. Soup occasionally, in lieu of pudding. | Four or five oz. bread and butter, and $\frac{1}{4}$ -pint milk in water. |

FROM TEN TO SIXTEEN.

| Breakfast. | Dinner. | Supper. |
|--|--|--|
| Six or seven oz. bread and butter, and $\frac{3}{4}$ -pint of tea. | Five or six oz. roast or boiled meat, with 1 lb. potatoes, or other vegetables, or $\frac{1}{2}$ -lb. potatoes, and 3 oz. bread, $\frac{1}{2}$ -pint London porter,* on Sunday, Monday, Tuesday, Thursday, and Friday. Sixteen oz. of either plum or currant pudding, on Wednesday and Saturday. Soup occasionally, in lieu of pudding. | Six or seven oz. bread and butter, and $\frac{3}{4}$ -pint of tea. |

Children, and, indeed, all individuals who are the subjects of tuberculous disease of the lymphatic glands, exhibit various constitutional symptoms which demand the foremost attention of the practitioner; for, until such be amended, it is generally useless to employ those remedies which are intended to have a special influence on the local affection.

When tuberculous disease of the glands occurs independently of other scrofulous affections, or is the chief disturbing malady, there will usually be more or less irregularity of the digestive functions. Dyspepsia is a very frequent symptom, and one that causes considerable inconvenience. Again, there is a general debility about all the functions and organs of the body. The muscular, nervous, mucous, secretive, and arterial systems are deranged; and the whole constitution appears undermined, irritated, and depressed. To improve that irregularity of function which presents the most important relationship to the local affection, is the foremost aim of the practitioner. If the stomach and bowels are deranged—and such will frequently

* The quantity of porter or stout, which is the very best, is controlled by the order of the medical officers; as, indeed, are all the articles of food, which are most liberally allowed, according to the requirements of individual cases.

be found the case—attention must be bestowed to the regulation of their proper functions and actions; and, remembering the importance of this feature, I invariably commence the treatment of a case which is placed under my care by administering either an emetic or purgative, or both, provided special symptoms do not forbid the practice.

Having restored a better tone of health by the allowance of a good and liberal diet, bestowed attention to all sanitary measures, and obtained a cessation of, or a marked improvement in, the irregular action of various organs, by the administration of certain medicines tending to promote such an aim, as tonics, alteratives, etc., it will then be expedient to attend specially to the glandular mischief.

The following is a list of those agents which have been shewn by experience to prove most advantageous in the medicinal treatment of glandular tuberculosis.

Iodine, and its combination with various substances, constituting the following preparations: Iodide of potassium; iodide of sodium; iodide of ammonium; iodide of iron; iodide of lead; iodide of mercury.

Bromine and its combinations: Bromide of potassium; bromide of mercury.

Mercury and its combinations: Calomel; bichloride of mercury; mercury and chalk; iodide and biniodide of mercury.

Iron and its combinations: Sesquioxide of iron; carbonate of iron; sulphate of iron; sesquichloride of iron; iodide of iron.

Barium and its combination: Muriate of baryta.

Potassium and its combinations: Liquor potassæ; carbonate and bicarbonate of potash; iodide of potassium; bromide of potassium.

Sodium and its combinations: Carbonate and bicarbonate of soda; chloride of sodium; iodide of sodium; bromide of sodium.

Calcium and its combinations: Lime-water, or liquor calcis; chloride of lime: hypophosphite of lime; bone-earth.

Various *minerals*, as gold, manganese, etc.

Cod-liver and other *oils*, as neats'-foot, cocoa-nut, olive, etc.

Mineral acids, consisting of hydrochloric acid, nitric acid, sulphuric acid.

Vegetable tonics and bitters : Quinine ; barks of various kinds ; bitter infusions.

Vegetable extracts, etc. : Conium (hemlock) ; digitalis.

Purgative medicines, of both mineral and vegetable compositions.

Salt Water and other Baths.

These various medicinal agents are exhibited by the mouth, in a soluble form ; or through the skin, by means of local applications and baths.

Iodine. First in the list of all medicines that are of value in the treatment of scrofula stands iodine. It was, as is well known, discovered by M. Courtois in 1811, and investigated by Sir H. Davy and M. Gay-Lussac. Since this period, {mainly through the researches of Drs. Monson, Coindet, M. Lugol, etc., it has been considered almost as an infallible specific. No one who has paid attention to the therapeutical action of this agent can deny that, when judiciously administered, it does possess a certain distinctive influence over low, tardy, sub-acute, and chronic inflammatory disturbance of the absorbent glands. We have already seen that such is the case ; and it now remains to show to what extent, so far as an individual experience is concerned, it is available as an influential agent in the reduction or removal of glandular enlargements and ulcerations dependent on tuberculous implication.

In the early stage—the very first—of threatening tuberculous invasion of the glandular system, I believe a systematic and judicious use of iodine is oftentimes fraught with the greatest amount of benefit. It usually results that enlargement of a gland ensues before the actual deposition of tuberculous matter. This increase in size is dependent, in all probability, on direct irritation propagated by the blood ; and if it

continue for some considerable period, which it frequently does, ere the specific tuberculous action obtains, it is very possible that, in a large proportion of cases which are judiciously treated, amendment will speedily ensue, especially if the general health be well sustained. In such cases, the most convenient form appears to be the combination of iodine with an alkali, in the salt known as the iodide of potassium, provided it is advisable to diminish or remove the glandular mischief, independently of any other complication. The employment of this salt is often attended with the most encouraging and satisfactory results. Experience has taught me that it is, as a rule, administered in small but repeated doses more advantageously than in larger ones. This, I believe, is now an almost universally received opinion, and one that is commonly acted upon, not only in this country, but on the Continent: and so important did M. Lugol consider the administration of small doses, that he rarely prescribed more than one grain of iodine, and sometimes less, to be taken in the course of the day. M. Baudelocque is even more reserved in his use of the drug, and commences with an eighth of a grain, or a little more. Two modern writers (Drs. Smith and Ranking), to whose works I have already referred with advantage, are even still more conservative in prescribing the maximum doses of iodine; and doubtless their opinions, as well known practical physicians, have served very materially to moderate the large quantities of this drug which were formerly thought actually compulsory to obtain the desired effect. My own plan in children's cases is to give grain or half-grain doses of iodide of potash twice or thrice in the course of the day, increasing or diminishing the quantity in accordance with the requirements of individual cases. For general purposes, I prefer adopting the forms which have been so beneficially employed by M. Lugol, and which I extract from Dr. Ranking's practical treatise on *Scrofula*.

- | | | | | | | |
|--------|--------|----------------------|----------------|----------------------|-------|--------|
| No. 1. | Iodini | gr. $\frac{3}{4}$; | potass. iodidi | gr. $1\frac{1}{2}$; | aqueæ | ℥viij. |
| " 2. | " | gr. 1; | " " | grs. 2; | " " | " |
| " 3. | " | gr. $1\frac{1}{4}$; | " " | grs. 3; | " " | " |

There is no doubt in my own mind that the action of iodine is more advantageously obtained when the drug is combined with an alkali, in the form recommended by this distinguished French practitioner, and I speak from considerable practical experience. The actual quantity of iodine that it is expedient to employ before the system becomes so influenced as to obtain resolution of glands enlarged in the incipient stage of tuberculosis is, as slight consideration will at once suggest, very uncertain. No definite rule can be laid down. Individual cases require independent treatment; and the skill of the surgeon must be invoked on every occasion in which it is deemed expedient to employ the medicine. In some cases I have used, with immediate beneficial results, very small quantities of iodine; while in others it has been necessary to continue increased doses for a very considerable period. I have already mentioned an instance in which the employment of iodine was extended over a period of four to five months before direct advantage ensued; and I have met with various examples which have shown me how important it is not to lead patients to anticipate with too much hopefulness the advantages to be derived from a limited and moderate course of the drug. When iodine has been given for some time, and no adequate advantage has been obtained, it is usual to suspend its administration for a period, and by other treatment endeavour to remedy the cause which, in all probability, prevents its beneficial operation. I have constantly found that the good effects of iodine have been established after the use of an emetic and a course of gentle purging; and it is now my common practice to have recourse to such proceedings, provided I fail to obtain, after a fair trial, those advantages from the drug which, after due consideration, I had a right to expect. I shall not give any cases to prove the correctness of what I have stated; but I have in my note-book many, the recital of which would at once show how irregular is the action of a medicine which is too often administered with almost blind credulity.

As the enlargement that precedes the deposition of tuberculous material is slow in progress, so also is the restoration of the affected glands when reduced by iodine to their normal condition and size.

Besides the preparations of iodine with potash, it is usual to resort to its combinations with other substances. The iodide of sodium has been employed by some practitioners, but I have myself never resorted to its use. Iodide of ammonium has been recommended lately by my friend Dr. B. W. Richardson, and was formerly employed by Baudelocque. I have made trial of its efficacy, and my experience enables me to speak somewhat definitely of its value. M. Gamberini of Bologna (*Bulletino delle Scienze Mediche*; *Gazette Hebdomadaire*, June 1st, 1860; *BRITISH MEDICAL JOURNAL*, June 30th, 1860) has of late made an extensive use of the preparation, and states that it is indicated in all cases where the other iodides are of use; and that it produces a rapid cure. It is seldom that intolerance follows its administration; but when it does, the symptoms denoted are violent pains in the throat and heat in the stomach. The dose is from two to sixteen grains daily; but I cannot believe that such a large amount as the latter quantity is ever needful. The advantage of the iodide of ammonium over other iodides is, that its action is more rapid, and the dose generally smaller.

Often in the administration of iodine, from various circumstances, it is expedient to combine it with some mineral tonic, especially in the cases of delicate children, the subjects of glandular disease. There is no preparation which is so beneficially employed as the combination of iodine and iron, in the form of the *syrupus ferri iodidi* (*Phar. Lond.*), when such necessity exists. Quantities varying from half to a whole teaspoonful may be most advantageously exhibited twice or even three times a day, especially when combined, as will be presently stated, with cod-liver oil. I am in the habit of making extensive use of this medicine, particularly in cases of inci-

piently enlarged tuberculous glands in the poor and ill nourished children who apply at the Great Northern Hospital; and the drug is also in the same favour with the majority of my colleagues at this institution and at Margate.

I am not aware of any very definite experiments having been made as to the value of this preparation in the various states of tuberculous glands; but I cannot avoid alluding to the results obtained by Dr. Cotton, one of the physicians to the Brompton Consumptive Hospital, in his treatment of twenty-five cases of phthisis pulmonalis. Dr. Cotton arrives at the conclusion that, "although iodide of iron is very far from exhibiting what might be termed a *specific* effect, it nevertheless seems to act very beneficially in a fair number of consumptive cases, especially in those where the disease is only in an early stage." (*Med. Times and Gazette*, June 16th, 1860.) The analogy between tubercle of the lung and that of lymphatic glands may perhaps serve to show the value of the medicine in the latter form of disease.

The iodides and biniodides of lead and mercury have been strongly recommended by some surgeons, as possessing considerable advantage in the treatment of various forms of *scrofulous* glands. When a syphilitic taint exists with the more chronic malady, the iodides and biniodides are certainly powerful remedies, and have been much extolled by M. Ricord and other continental surgeons; but if such complication do not exist, perhaps, little real advantage is to be gained by the internal administration of either.

The therapeutical effect of iodine has very lately attracted considerable attention in the Academy of Medicine in Paris, owing to the statement made by M. Rilliet of Geneva, that small doses of it cause iodism. Opposed to this assertion are the opinions of some of the most eminent of the Parisian school. M. Velpeau states that he must have given iodine, in varying doses, to upwards of fifteen thousand patients during his professional career; and that he has never seen iodism produced.

In two instances, flesh was lost; while occasionally coryza and ptyalism resulted; but the mamma and testis were never influenced by even the largest amount that was exhibited. (*Lancet*, April 16th, 1860.) My own experience tallies with that of this distinguished French surgeon. I have never met with an instance in my own practice in which any destructive influence was exerted over the normal tissues of the body. I have, however, often read of its precocious absorptive properties; but have happily failed to become personally acquainted with them. It is not unusual for too large and frequent doses of the medicine to produce nausea, loss of appetite, giddiness, browache, lassitude, and a mawkish state of the breath. On the other hand, iodine, in proper and judicious quantity, tends to impart health and increased functions to many of the tissues of the human frame.

Bromine. Bromine has been substituted for iodine by some practitioners, under the supposition that it possesses more direct influence over the various stages of tuberculous and scrofulous glands. M. Kopp of Hanau has given great attention to an extended trial of this drug, and has no hesitation in stating that, as a general rule, he conceives its effects are inferior to those of iodine. In combination with potash, it has obtained, however, great notoriety, as forming one of the principal virtues of the waters of Kreuznach. It is doubtful if bromine in any form is as useful as iodine. It has been argued that its administration can be pushed to a greater extent than is possible with iodine, and that its effects are more rapid than those of the sister drug. I am unwilling to allow my own individual experience of this medicine to influence others, as, I conceive, I have not sufficient evidence to permit of any definite deductions being drawn as to its stated virtue in glandular tuberculous disease.

Mercury. Long before iodine was used as an antiscrofulous agent, even in the form of burnt sponge and various calcined sea-products, mercury had enjoyed an unequivocal reputation.

From the earliest period it had been prescribed, with universal consent; and we have only to look back a few years into the history of medicine, to see how unconditionally this mineral was administered for all kinds of glandular enlargements. At one time it was exhibited in its pure state, as quicksilver; but with what advantages, the writings of ancient authors fully acquaint us. As calomel, it obtained most unenviable reputation as a *specific* for all kinds of glandular affections, and was oftentimes used in the same reckless way as for syphilis. As might be expected, this potent drug, in the hands of the inexperienced and ignorant practitioner, constantly did more harm than good; and the less inclined the glandular affection seemed to yield to the efficacy, or rather to the inefficacy, of the remedy, the more strenuously was it pushed, in the vain, but, alas! strongly implanted hope, that resolution would in time be effected. It was no uncommon event for individuals in a state of advanced tuberculous disease not only of the glands of the neck and other parts, but also of the lungs, to be salivated, not once, but frequently, in the belief that the sure virtue of the mineral would sooner or later be established.

But calomel was not the only salt of mercury that was in use. The bichloride, or what was formerly termed the submuriate, introduced by Van Swieten, was supposed to possess even stronger control over scrofulous affections, and especially those of tuberculous formation. Wiseman prescribed enormous doses of this salt, which were administered at night-time, and continued for an indefinite period. A single grain was not an uncommon dose for a child, which, as admitted by an able writer, acted "forcibly on the bowels of children, and often on the stomach too; sometimes producing a very distressing languor for the whole of the following day."

There can be no doubt that such practice tended greatly to diminish in the estimation of intelligent surgeons the reputed virtue of this and other preparations of mercury; and therefore it is not astonishing to find the same author, from whose works

I have just quoted, stating that "in scrofula as a constitutional disease, these and all other preparations of quicksilver are very much less useful than they are commonly reported to be; nay more, unless I am very much deceived, the incautious use of them will remarkably aggravate such scrofulous affections as are present, and even give rise to others, which possess all the characters of scrofula, and yield to anti-scrofulous remedies." (Henning, *op. cit.*)

This salt was used generally in the light of a deobstruent; and, although we have freely acknowledged the injudicious way in which it was very commonly employed, still it is satisfactory to be able to admit that now, in some instances, it is employed with good effect. Perhaps, the late Dr. Plummer was greatly instrumental in procuring its moderate administration by associating it with guaiacum, sulphur, and antimony. When mercury is now administered, it is generally in the form of this pill, or as the liquor hydrargyri bichloridi (*Phar. Lond.*). My own experience militates against the acceptance of the drug as an active and trusty agent in the resolution of glandular enlargements from progressive tuberculous formations; and, although I sometimes deem its offices of value, I cannot say that I am in the habit of prescribing it. I have but one opinion regarding the general use of mercury in scrofulous disease, although it may be modified by peculiarities of special cases. I believe that the less frequently it is administered, in the light of a specific, the more satisfactory will be the therapeutic management of the disease.

Mercury and chalk, in the form of hydrargyrum cum cretâ (*Phar. Lond.*), I have already spoken of as a valuable medicine, in the light of a purgative and alterative, although it is impossible to advocate its more potent qualities as a resolvent in the treatment of tuberculous glands.

To the use of the iodide and biniodide of mercury I have already referred. Of the latter salt, Dr. Nevins says, after having tried it in the treatment of glandular affections, "my

own experience of it is not favourable; it has exerted little influence, good or bad." (Translation of the *London Pharmacopæia*, J. B. Nevins, M.D., 1851.)

Iron. Very early in the treatment of scrofulous glands, the exhibition of various minerals, whose chief action consists in restoring tone to the stomach and constitution, received the attention of surgeons. Among the most generally esteemed of such preparations are those of iron. They are not administered with the view of exercising any special action in the reduction or amendment of the glandular mischief, but to give health and tone to the impoverished and debilitated state of system which usually obtains in scrofulous diseases. When associated with iodine, as already mentioned, the combination is one of the most useful at the disposal of the surgeon. The salts most generally in use at the present time are those of the carbonate, sulphate, and tincture of the sesquichloride of iron. The former, as *ferri carbonas cum saccharo* (*Phar. Lond.*), in two to twelve grain doses, is a valuable and useful preparation, although I prefer the tincture of the sesquichloride as a general rule, given in small but repeated doses, either in water, in combination with a mineral acid and quassia, or in effervescing draughts when feasible.

Baryta. Many years ago, Hufeland introduced into practice the muriate of barytes, and for a very considerable time the medicine was held in high repute as a positive resolvent of glandular enlargements, and few authors ventured to write a treatise on the management of scrofulous glands without lauding its wonderful properties. I have had no personal experience of its use worth recording; but Lebert says that he never saw the least effect produced even by its most careful and determined exhibition. Balman, however, who has written a practical treatise on *Scrofulous Diseases of the External Lymphatic Glands*, states that he is disposed to entertain a very favourable opinion of its efficacy, particularly in chlorotic,

cachectic, and other cases, attended with a languid circulation and much debility.

Potash, etc. Liquor potassæ has long been vaunted an almost infallible specific for the reduction of tuberculous glands in certain stages by those who support the alkaline treatment of the affection. There is no doubt that it is of value in reducing chronic glandular enlargements; for I have frequently known it of decided benefit. Its combination with iodine has already been considered; and I believe that the action of this drug is oftentimes much increased in virtue by association with a greater or less quantity of the alkali. It is difficult, however, to lay down any fixed rule for its administration. I have never treated a case of clearly incipient or more advanced state of tuberculous affection of the lymphatic glands solely with liquor potassæ, and therefore am not in a position to speak more definitely as to its right to be considered an infallible agent in the treatment of this form of disease.

Sodium. The same remark will apply equally to sodium and those compounds which have been already but partially adverted to. With regard to the chloride of sodium, or common salt, it has been supposed that it exerts a special influence over the progress of scrofulous glands, owing principally to the fact that many cases of glandular mischief are greatly benefited by sea-water, which at one time was enthusiastically recommended as "a sure and certain cure for struma", when drank with assiduity and faith for a considerable period. I have only to add, that I never advise such a plan, although I have known a great many scrofulous patients, sent to Margate from various parts of England, indulge freely in the imbibition of this plentiful beverage, believing that its curative effects were well established and of certain fulfilment. I can assure those of my inland readers whose belief in the virtues of the German Ocean is not probably so sincere, that many is the scrofulous patient, old and young, who, before quitting the bathing-

machine, quaffs in faith a considerable quantity of the briny liquid. It is but fair, however, to add that such constancy to so plenteous a cup is, in a measure, due to the generally received notion that iodine to a considerable amount is held in solution.

Lime. Lime in various forms once enjoyed great repute for the supposed direct effect it produces on the suppurative stage of glandular tuberculosis. Extolled far in advance of all combinations was the muriate or chloride of calcium. At one time it was reckoned a specific, but met with its partial downfall after Mr. Goodlad had given it a fair trial. "I can say", writes this intelligent writer, "little in its praise; for I think, in at least one hundred cases, I was not able to distinguish one which amended from the use of it, where the amendment could not otherwise be satisfactorily explained." (*Op. cit.*) It will be presently seen, when considering the effect of remedies on advanced stages of tuberculous disease—the ulcerative and suppurative—that this and other lime-salts may really exert some material influence not only on the economy, but also on local sores, etc.

Many years ago, when I had barely commenced the routine of professional study, a German practitioner came to Margate to make various inquiries regarding the influence of the climate of the town in preventing and curing scrofulous diseases, and I remember that he attributed no small share of the virtue of this health-restoring sea-port to the water drunk by a large proportion of the inhabitants, which contains considerable quantities of lime-salts. This water, which is unusually *hard*, I analysed; but regret that I cannot put my hand on the quantitative determination I made of it at the time.

It is a very common practice with many medical men to administer to scrofulous children large proportions of lime, in the form of liquor calcis, or lime-water in combination with milk. I have known this treatment succeed admirably on many occasions, especially where there existed any distinct

derangement of the osseous system. How far such a drink is influential in procuring resolution of affected glands in every stage, is open to doubt, but, I believe, it is certainly sometimes of advantage in the later stages of tuberculous degenerations.

But the lime-salt which has of late gained considerable repute is the hypophosphite, introduced by Dr. Churchill for the treatment of pulmonary consumption. Although opinions differ as to the merits of this preparation in the cure or amendment of phthisis,* still there are many who are eager to record their praises in favour of its virtue in scrofulous disease of the osseous system. In such affections I have known it of great value, and I can also strongly advise its exhibition in cases of tuberculous glands. It may be given in five, ten, or twenty grain doses, in milk or other fluid, once or twice a day. Children who have an aversion to medicine do not mind taking it. What its introducer has said regarding its effect on pulmonary disease may, in a great measure, be made applicable to tuberculous affections of the lymphatic glands. There can be no doubt that it materially assists the resolution of varying forms of scrofulous degenerations, hastens the cessation of suppuration, and promotes the cretification of tubercle when such a change seems imminent. I have found much advantage from its use, and can confidently recommend it as a valuable adjunct in the hands of those whose attention is devoted to the treatment of scrofula.

I have for some time been in the habit of prescribing lime-salts in combination with iron and iodine, with apparently very beneficial results. A preparation containing distinctive proportions of phosphate of lime, iron, iodine, etc., has been made for me by Mr. Gould, chemist, of Oxford Street (under the name of *liq. ferri phos. comp. c. iodinio*); and I am quite certain that material benefit has resulted from its use in several instances. In one case, that of a young gentleman

* See a very practical paper on the use of the hypophosphites, etc., in the treatment of phthisis, by Dr. Quain, in the "*Lancet*", March 17th, 1860.

who had enlarged glands of the neck (early stage of apparently tubercular infiltration), great advantage accrued from its persistent use during two to three months; and I have been induced to make a continuous trial of it at the hospitals with which I am connected. It is, however, extremely difficult to prevent the early occurrence of decomposition and precipitation of the lime. There are also other preparations containing different proportions of phosphate of lime and iron which have lately received much attention.

I have pleasure in referring to a very interesting paper from the pen of Mr. Samuel Gale, published in the *Chemical News* for March 17th, 1860, in which are described many excellent preparations of phosphate of lime, soda, etc., in combination with iron, manganese, zinc, etc.; and, although I am not an advocate of all the medicines herein detailed, still there are some which are well worthy the consideration of practitioners. Among these may be mentioned the syrup of the phosphate of iron and lime and the syrup of the phosphate of iron. The former has obtained great renown both in America, where it is largely consumed, and in this country. It is known to the public by the name of "chemical food", as it is stated to contain all the elements necessary to revivify the constitution when harassed by scrofulous diseases. It is kept by most chemists, but is obtainable only from America. I can specially recommend the preparation of Messrs. Squire of Oxford Street, and Mr. Fincham of Baker Street; and advise it to be taken in concert with some effervescing draught, as that formed by the combination of equal parts of tartaric acid and bicarbonate of soda, whereby the sweet taste of the syrup, which forms a compulsory portion of the medicine, is much and agreeably disguised. The dose for a child is about one teaspoonful. The improvement gained by the use of a limited course of the syrup is oftentimes most marked, and I could record many instances of strumous affections which have been greatly benefited by it.

Gold, Manganese, etc. Having never prescribed the former of these minerals, I am unable to corroborate its stated virtues as a resolvent in cases of tuberculous disease of the absorbent glands. The latter is somewhat in favour, especially in Scotland, as a tonic; and, as such, is useful, in combination with lime and iodine, in the management of tuberculous diseases.

Cod-Liver Oil. Perhaps there is no single medicine which, during the past half century, has met with more extensive trial, and so charmed both the profession and public, as the oil derived from the cod's liver; and although its employment has not always been followed with direct and immediate benefit in all cases in which it has been prescribed, still there is no doubt that it often proves a most valuable agent. In scrofula, in various forms, the use of this oil has long been cherished. Dr. Bennett, from the pages of whose interesting work (*A Treatise on Cod-Liver Oil*: J. H. Bennett, M.D., 1841), much information is to be gained, states, that this oil was used in Holland as a curative agent many years before it became familiar to the profession of this country; and it was only in 1822, a prize being offered by a learned society of Utrecht for the best essay on the chemical and therapeutical properties of the substance, that its efficacy in the treatment of tuberculous diseases was developed.

As I am mainly writing from my own individual experience, I feel bound to advance in an especial manner my own impressions regarding the value of the medicine. In all stages of tuberculous manifestations of the lymphatic glands, I have generally found the administration of the oil of decided benefit, provided a sufficient quantity has been taken; but in no stage of the disease is it of such advantage as when suppuration and ulceration have weakened and impoverished the irritated system. In the earliest forms of glandular implication from tuberculous exudation, a free and persistent use of the oil is

very often attended with all the beneficial results which could be desired. When there is danger of ulceration and suppuration, by reason of the degeneration of the tuberculous material, the exhibition of the oil constantly acts favourably in preventing the occurrence of such untoward events. I could quote many cases illustrative of this point, and prove that, in all probability, the worst results would have followed the progressive advance of the disease had not the use of the oil been maintained for a considerable period, and, doubtless, similar instances could be collected from the practice of all surgeons.

Under a diligently pursued course, the effect on the suppurating tracts of the ulcerated cavities, which are found in connexion with the destroyed gland and the skin, is often marvellous; while disappointment occasionally occurs in its administration for the cure of less formidable mischief. Many are the theories that have been advanced regarding the way in which this valuable medicine acts upon the constitution. Dr. Bennett, who has so ably considered the subject, believes that “the *modus operandi* consists in stimulating the lymphatic glands and vessels, and by these means increasing the activity of the capillary system. By its action on the former, the process of assimilation is facilitated, and the appetite increased; the quality of the blood is thus improved; and so, lastly, the different organs and structures of the body become better nourished, and receive more *turgor vitalis*.” In whatever manner the oil acts, it is somewhat doubtful to which of its properties the good effects are traceable. There are some practitioners who believe that it is solely valuable on account of the iodine it naturally contains. This is evidently an erroneous impression, for much of the oil in everyday use contains scarcely a single trace of this valuable and efficient drug; and, moreover, it has been found that other oils, besides that obtained from the liver of the cod, are of advantage in the treatment of scrofula, although they have little or no iodine in combination. Some highly interesting observations have

been made on the use of various oils in the treatment of tuberculous diseases, by the late Dr. Theophilus Thompson. In his published *Lettsomian Lectures*, delivered before the Fellows of the Medical Society of London in 1855, Dr. Thompson recorded some extensive inquiries which he instituted regarding the relative value of many oils, such as sperm and seal oils, and those derived from the cod's liver, cocoa-nut, sunflower, neat'sfoot, etc. This gentleman believed that these various oils act by modifying the condition of the blood, and especially the condition of the granules which enrich the fluid, and dispose them to the calm progression of change, by which they are made to contribute to the production of healthy structure (p. 36). I have myself had but slight experience in the use of these various oils, having found that derived from the cod's liver so highly serviceable, and, even for hospital purposes, sufficiently cheap.

From Dr. Thompson's *brochure* I extract the analysis of four oils which are most frequently given in tuberculous disease, as furnished by Mr. Dugald Campbell:—

Ultimate Analysis of Oils.

| | Carbon. | Hydrogen. | Nitrogen. | Oxygen. |
|-----------------------|---------|-----------|-----------|---------|
| Cod-liver oil | 80.18 | 13.72 | 0.246 | 5.854 |
| Neats'-foot oil | 64.33 | 12.50 | 0.064 | 23.106 |
| Cocoa-nut oil | 69.62 | 12.49 | 0.060 | 17.830 |
| Olive oil..... | 69.38 | 13.47 | 0.058 | 17.092 |

While partially agreeing in the opinion of so able a writer and observer, I cannot overlook the fact that the fatty properties of these oils have greatly to do with their value, as has been well advocated by Dr. Ascherson of Berlin. There can be no doubt that the digestive functions are rapidly amended by their use as an article of diet, independently of their therapeutical action; and that marked improvement oftentimes obtains in diseased glands and other organs when

the assimilating processes are more harmoniously regulated. Dr. James Turnbull (in his *Inquiry into the Curability of Consumption*, 1859) states, that he believes cod-liver oil acts by promoting the solution of albuminous aliments in the stomach. Mr. Balman, without advancing any special theory as to the action of this oil, came to the conclusion that it exercised little or no influence on the great majority of external glandular tumours; but that it is a most valuable and potent remedy in some forms and complications of disease (*op. cit.*, p. 158).

To avoid disappointment in the effects which are anticipated by a course of cod-liver oil, it is necessary to pay attention to various points. Firstly. What kind of oil is the most advantageous? Dr. Bennett says that "the best is the clear brown or reddish variety; next in power is the yellow; and the least beneficial is the white." It appears that the natives of Norway, and other northern countries, drink the very darkest that can be procured. Such, however, is most unpalatable, and its use in this country is seldom advocated. I have used the yellow variety in the majority of hospital and poor cases of scrofulous disease which have come under my notice; but in private practice some difficulty is experienced in substituting this more efficient form for the less nauseating one, viz., the white, or lighter coloured.*

All patients, young or old, in commencing a course of the oil, should begin by taking very small quantities, for otherwise the very first dose may upset the stomach, causing nausea and vomiting, thereby oftentimes creating a very natural though unfortunate dislike for it. I usually advise not more than a teaspoonful, or even half this quantity to be administered at first, once a-day, directly after a full meal. It may be disguised in any tincture, such as that of orange, or in wine, or brandy, or milk, or with a sprinkle of salt. I believe, how-

* It is now well known that the varying shades of color imparted to cod-liver oil are to be mainly attributed to the state in which the livers are, prior to being submitted to the process by which the oil is extracted.

ever, that the oil floated on a small quantity of water and quickly gulped is conveniently and tastelessly conveyed into the stomach; and in hospital practice I generally suggest this method in preference to others. When, however, the oil cannot be taken without producing nausea and a feeling of sickness, it may be administered in the form of an emulsion. I have frequently prescribed it in the following way:—

Rx. Ol. jecoris ʒiv ; pulv. tragac. co. ʒiv ; creasoti m. ij;
aq. anisi ad ʒxvj . M.

I write a tablespoonful for a dose, and find that by degrees a very considerable quantity can be taken without the production of any disagreeable sensation. Gradually the quantity may be increased, and taken twice or thrice during the twenty-four hours. It is not by any means uncommon after a time to find, instead of dislike, an actual craving for the oil; and I am aware of several instances in which very large quantities were taken with no unpalatable inconvenience over periods of six and ten years. There is a lady now at Margate, a patient under the care of my father, whom I have occasionally seen in consultation with him, and who for nearly eight years has daily taken the oil in considerable quantities with the most marked benefit; and I believe if it were discontinued she would at once rapidly decline, as she is the subject of vertebral disease accompanied with continual suppuration, the products of which find exit through the mouth, by reason, it is supposed, of a fistulous communication with the œsophagus. Care should always be observed in recommending the use of the oil; for, while sometimes its employment is fraught with direct advantage, at other times the distress it produces counteracts the good effects of other medicines, and in no instance should its continuance be pressed, if nausea, biliousness, and headache are produced. “The flaccid and phlegmatic bear it best”; while those suffering from fulness of habit are generally very susceptible of its irritating properties. Conjoined with other

medicines it is often rendered doubly valuable, as a means of sustaining and improving an impoverished condition of system, although it may not always, as will be presently seen, exert a direct effect upon scrofulous or tuberculous manifestations of certain organs by virtue of any special property it contains. With iodine and iron, especially in the form of *syrupus ferri iodidi*, it is of great value, and thus conjoined is by many supposed to act very frequently as a specific in various kinds of disease. When the oil cannot be administered by the mouth, it is advisable to obtain its admission into the system by inunction. I have frequently pursued this plan, and with excellent results. The disagreeable smell arising from its outward use, may be much mitigated by the use of lavender and other scents. But it may occur, that patients are unable either to swallow the oil or submit to its inunction. Under these circumstances, I am in the habit of prescribing glycerine in drachm doses, which may be increased or decreased according to the fancy of the patient or his surgeon, and I have good reason to believe that it is no inefficient substitute.

Mineral Acids. In the treatment of tuberculous affections of the glands, the mineral acids are only so far of use as they are beneficial in keeping up the tone of the system, creating appetite, and arresting sweating, which is such a frequent and weakening accompaniment of the advanced stages of phthisis.

Vegetable Tonics and Bitters. In the year 1755, Dr. John Fordyce introduced the use of cinchona as a *specific* for scrofula, and was soon followed in his high opinions of the medicine by Dr. John Fothergill, and Dr. Bond of Philadelphia. Subsequent experience shows, however, that it is only of advantage in giving tone to the stomach, and thus improving the appetite, and allowing improved nutrition and assimilation. Dr. Henning, who had much experience in the administration of the medicine, says, that "the proper time for the

exhibition of the bark is when suppuration has taken place in a scrofulous gland, and previously to the discharge of its contents." Quinine, and various bitter infusions, are of utility in the same way; for, as scrofulous and tuberculous diseases are mainly due to departure from health, etc., so any substance that tends to promote the more harmonious action of an organ is of direct advantage.

Conium or Hemlock was recommended by Dr. Störck of Vienna, as a remedy in scrofula, and particularly in tuberculous disease of the lymphatic system; but it is very doubtful if it exercises any special effect on the amelioration or cure of the disease. It is, however, of advantage when combined with certain medicines, which, given alone, cause irritation of the stomach and bowels; and it is in this way that I have alone found it of value, although so high an authority as Sir C. Scudamore has recommended its use in phthisis.

Purgative Medicines. With the ancient writers on scrofula, purging freely by means of medicines was thought highly advantageous, as it procured the elimination of the irritating material which originated the development of the disease. Such a doctrine is now no longer upheld; and, instead of distressing the already debilitated constitution by the exhibition of purgatives, we are careful to husband the powers already weakened, although, as before mentioned, it is especially necessary to attend to the due regulation of the bowels. I have already detailed the plan I am in the habit of adopting to procure this end, and have fully adverted to the importance of so doing.

Baths. Baths of various kinds have, from an early period, received the sanction of many excellent practitioners. Tepid and cold baths are of use in glandular disease, by giving tone to the system and ensuring cleanliness and healthy action of

the cutaneous surface. Salt-water immersion, as previously observed, is serviceable in inducing the same ends; but it is not, as far as my observations extend, always of specific advantage. It is astonishing oftentimes, however, to see what rapid benefit is obtained by a course of saltwater (sea) bathing. Suppurating tracts soon contract and heal, and chronic purulent discharges quickly diminish. The appetite and general tone of the system improves, and in this way the scrofulous lesions sooner vanish, or altogether heal. So convinced of this fact are we at Margate, that all scrofulous patients, provided no contraindications exist, enjoy the frequent advantage of the salt-water bath. I have oftentimes contrasted the results of cases of glandular tuberculous mischief treated with and without the use of saltwater bathing, and I am convinced that whatever the exact virtue of the bath may be, it is, generally speaking, of great advantage in the treatment of tuberculous manifestations of the lymphatic system. In the use of baths of iodine, bromine, etc., I have had but little or no personal experience, and must therefore be brief in my notice of their effects in glandular tuberculosis.

Both MM. Lugol and Baudelocque speak very highly of their effects in the treatment of abscesses and disease of the osseous system; and it is well known that many waters, such as those of Kreuznach, which contain bromine, are of especial advantage in causing diminution of hypertrophied glands, and promoting the cessation of suppuration and cicatrization of tuberculous cavities. When I was lately at Aix-la-Chapelle, Dr. Diemer informed me, that the amendment which followed the use of the baths and waters which contained iodine or bromine was generally very marked; but that it was always of the highest importance to regulate their administration, as many constitutions, instead of being improved, were sensibly disordered by them.

The various medicines which are of most advantage in the general treatment of tuberculous disease of the glands having

been briefly reviewed, it may be well to consider how the individual phases of diseased action may be combated by them.

In the incipient stage of advancing tuberculosis, or when simple enlargement, inflammatory and irritative hypertrophy, have obtained, the administration of cod-liver oil and iodine will, as a rule, be accompanied with most benefit, especially if due attention be paid to the proper regulation of the digestive organs. In addition, good and nutritious regimen, and, if possible, a seaside residence, will be of the greatest benefit. I am urgent on this point, because I have so often seen the rapid amendment that takes place in many of the poor scrofulous children who, year after year, are admitted into the Children's Hospital at Margate. As soon as the exciting cause of the disease is lessened or entirely removed, there is great probability of the glandular mischief subsiding; and although it would be very difficult to point out what has been the exact nature of the hypertrophy in every instance, still there generally coexists sufficient evidence to show that, in great probability, it was dependent on advancing tuberculosis. In nearly one hundred and fifty cases which I have collected of tuberculous glands in various stages, or cases which appeared to be of such a nature, more than one-third never arrived at that stage in which there was clearly evinced a positive deposition of tubercle, but under suitable treatment subsided, or nearly so, the constitutional powers having been improved and supported. No fixed rule can be laid down whereby to direct the management in all cases; but when the use of iodine and cod-liver oil is indicated, it will be expedient to pursue a gentle and tolerant use of the medicines. When a gland or series of glands are really invaded by tuberculous exudation, considerable skill is required in selecting a correct therapeutical treatment. How far iodine is useful at this stage, *i.e.* before softening and suppuration have commenced, is a question open to grave discussion;

but if the evidence of practical and inquiring surgeons is to be believed, it is probable that the good effects of this valuable drug are oftentimes overrated.

M. Baudelocque has quoted cases of tuberculous glands which have been cured at this stage by means of iodine; but I have reason to suspect that the actual deposition of tubercle was by no means clearly ascertained in every instance. M. Lebert says, his experience is not favourable to the utility of iodine in this affection of the glands; for during a period of ten years wherein he steadfastly used the medicine, he failed to obtain satisfactory evidence of the absorption of the tuberculous exudation. Long before I was conversant with the opinion of this distinguished surgeon, I tried, in many instances, the effect of iodine, internally administered, on tuberculous disease of the glands, and arrived at a somewhat similar conclusion, which future experience corroborated, although it appeared, after all I had heard regarding the wonderful properties of the drug, to be somewhat immature. The diminution which certainly obtains after a persistent use of iodine, in many cases of apparently tuberculous glands, is dependent on the absorption of the plastic material which has followed any inflammatory disturbance. But I am loth to speak too precisely on this point, as it is one that is open to much discussion. If iodine, however, do work such positive cure of tuberculous glands by promoting or obtaining absorption of the tuberculous exudation, how is it that so many instances of undoubted tuberculous glandular implications do not subside, or even remain in *statu quo*, instead of advancing to suppuration? How is it that in 132 cases of carefully tabulated tuberculous disease of the cervical glands, 82 passed into suppuration, and that only the remaining 50 completely or even partially escaped, although they had received the advantages of treatment? I believe further attention to this point, in the consideration of the real value of iodine, will prove of great

practical importance. Past experience has already placed me on my guard against promising too much from a persistent course of the medicine, even in favourable cases, as its action has oftentimes shown itself in a very uncertain way. Much benefit has been said to arise from the use of cod-liver oil in this stage of the disease; but I am somewhat doubtful as to the virtue of the medicine in directly influencing the disappearance of tuberculous exudation. Its administration is certainly advantageous; but I cannot see that it exerts any specific action on an affected gland, save that which may be produced by maintaining the remaining portion of the absorbent system in as healthy a state as possible, and thus guarding against future similar implications. The same observations are applicable to all kinds of tonic medicines, such as iron, quinine, the mineral acids, vegetable infusions, etc.; for they are devoid, as far as is known at present, of any special influence over tuberculous deposits.

It is questionable to what extent mercurial preparations affect a gland involved in the way we are considering. I believe that the exhibition of mercury, with the view of directly affecting the glandular system, is not to be encouraged; for even admitting that the local disturbance may thereby be benefited, it is more than probable that a serious amount of damage may be inflicted on the constitution. As already stated, I seldom or never give mercurial preparations in scrofulous disease of the glands, with the view of placing the absorbent system under their influence, unless certain complications point to their advantageous use. The salts of lime, especially the hypophosphite combined with iron, as the syrup of the phosphate of iron and lime, may be administered with much advantage. It is impossible to say to what exact extent the exhibition of lime influences the condition of tuberculous exudation in the glandular system. I believe, from the good results I have seen, that it often enables resolution to proceed with greater rapidity; but whether

it is directly instrumental in affecting a cretaceous metamorphosis, I am not prepared to say ; and till further experience shall show in what special way it is of value, I think, we must be content to prescribe it in partial ignorance of its exact action. When softening and liquefaction have commenced, they are due to the destructive degeneration of the tuberculous exudation. To support the tone of the entire system is the aim of the surgeon. It is more than doubtful that any medicine, exhibited with a special view of procuring resolution without suppuration, will be of any avail without due attention be paid to the general health. It is usual to stock the system with iodine, and to apply it locally, as will be presently mentioned, under the impression that disintegration and softening with liquefaction having taken place, absorption will rapidly remove the altered tuberculous matter. My own opinion is, that a destructive, or what may often be viewed as a curative, process having advanced to a certain point, ulceration of the covering integuments will, generally speaking, speedily obtain, so as to give exit to the pent-up material. It may be that absorption will remove the liquid and least effete portion of the altered tubercle, and leave the solid part to undergo such changes as were described when considering the pathological metamorphosis of tuberculous exudations. Some authors are inclined to believe that such a process frequently occurs ; and that a residue of comparatively inert, changed, tuberculous matter remains, keeping the affected gland still increased in size, though in a harmless condition. If such changes can be assisted by art, it is certainly advisable to make use of those means which would most materially aid nature in her curative endeavours. With this view, iodine or bromine may be administered, and from M. Baudelocque's experience it would appear that such treatment is often of avail. I am somewhat reserved on this point, because I have failed, as yet, to obtain any very definite results as to the influence of iodine

in producing certain effects which we know do sometimes take place. Lime-salts, with cod-liver oil and iron, I believe, are important adjuncts in the treatment, although it is doubtful to what extent they are directly useful, and in what manner they exercise any influence over the conditions of the tuberculous alterations.

When suppuration of the gland and ulceration of the integument have fairly set in, notwithstanding the most skilful treatment may have been adopted from the earliest manifestation of diseased action, it becomes advisable to use such medicinal and dietetic means as belong to the art of physic. To support the constitutional powers, which are further distressed by the destructive process which is taking place, is the first call to which the surgeon has to respond. Cod-liver oil, glycerine, iron, quinine, and the salts of lime, with the mineral acids, will ordinarily be found of most avail. If the patient be young, and many glands, as is very commonly the case, be implicated, it will be necessary to support the system by nutritious diet. Milk, eggs, and meat, combined with jelly, and a certain amount of alcoholic stimulus, with ale or porter, will form the best diet scale. I have found a certain flour, made by Messrs. Brown and Polson, of great advantage as an article of food for young children, who will frequently take it when the fancy refuses ordinary viands. The *Semola*, made by Mr. Bullock of Hanover Street, and the *Tous les Mois*, imported by Mr. Fincham of Baker Street, will likewise be found most valuable as a variety in the diet-scale of youthful patients. Should sweating and general languor be present, the mineral acids will be of great use, especially if combined with iron. When the discharge becomes more chronic, and the lips of the ulcerations thicken, and present their peculiar bluish-purple colour, the administration of iodine is often accompanied with great benefit. I have known many such ulcerations heal kindly under a judiciously prescribed course of iodine

when they have resisted other treatment. The great aim however, of the practitioner is to support the general health, and then the local means of treatment, presently to be adverted to, will meet with a fair amount of success.

Local Treatment. From the earliest period in the history of medicine, we find that the local treatment of *strumæ* has obtained the greatest consideration, and that practitioners have vied with each other in their enthusiastic recommendation of various sovereign remedies for the discussion and destruction of the disease under various phases.

The following quotation from Paulus Ægineta affords an illustration of the many and diverse forms of applications which, at a very early period, were in common use:—

“*Strumæ*,” writes this intelligent physician, “may be properly discussed by means of the sordes of baths, oil, or axunge; or equal parts of quick lime and natron, and four times the quantity of cardamon and fenugreek, may be boiled with honey for an emollient ointment and applied. This one discusses hard *strumæ*, and produces the rupture of suppurated swellings; the flour of darnel boiled with pigeon’s dung, or linseed and wine; or, green olives, either wild or cultivated; or, the white cardamus triturated with liquid pitch and made into an emollient ointment may be applied; or, the ashes of the dried root of the wild cucumber, and the burnt dried leaves of the bay, may be mixed with turpentine and applied; or, equal parts of stavesacre and of natron, with double the quantity of rocket, may be applied with rosin; or, goats’ or cows’ dung boiled in vinegar; or, the flour of bitter vetches soaked in the urine of a young person not come to manhood, and added to melted pitch, wax, and oil; or, a dead snake may be thrown into a pot, and being covered over with gypsum, it is to be put into a furnace, the ashes of it mixed with equal parts of fenugreek, and then added to honey, and used. And the composition from asps is an admirable one; also, that from

fullers' herb, that from the wild cucumber, and that from cedar rosin, etc." (Dr. Francis Adams's *Translation of Paulus Ægineta*, vol. ii, p. 91.)

It is by no means uncommon to find the most distinguished of ancient names associated with some well known *nostrum* which was held in general esteem on account of its reputed efficacy in the dispersion of enlarged glands dependent on tuberculous or scrofulous disease. Celsus had a favourite discutient; and others far less noted, not only in his time but in our own, have derived no small reputation and emolument from the sale of lauded and extensively advertised compositions.

The practice of the present day, as regards the local management of diseased glands more or less associated with tuberculous manifestations, is, without doubt, founded on the experience and teaching of the ancients, although authorized by science and the well-authenticated results of observations. Still, it cannot be denied that considerable ignorance and *routine* very frequently promote the adoption of certain local measures, which are not only inappropriate but absolutely mischievous. It is true that only in the hands of empirics and quacks is to be traced, now-a-days, the use of truly absurd applications; but it is not unusual, even for experienced practitioners, to resort to means which a moment's forethought would condemn.

The following arrangement includes the various methods of local treatment which may, with more or less advantage, be employed in the different states and conditions of glandular tuberculous implications:—

Firstly. When the enlargement of the glands merely denotes incipient tuberculous mischief, and it is desirable to obtain resolution and prevent softening and suppuration, the following means may prove of greater or less service:—*a.* Warmth; *b.* Fomentations and poultices; *c.* Cold applications, as lotions, etc.; *d.* Frictions; *e.* Linaments, oils, and unguents; *f.* Paints

and tinctures; *g.* Blisters and plasters; *h.* Electricity and galvanism; *i.* Caustics and actual cautery.

Secondly. When it is desired to remove or destroy rebellious tuberculous glands by more direct surgical means, a resort may be had to the following measures: *a.* Caustics and actual cautery; *b.* Irritation by means of foreign bodies introduced into the diseased glands; *c.* The knife.

Thirdly. When softening and suppuration have led to destruction of the implicated gland, and rendered surgical assistance necessary, either *a.* Caustic; or *b.* The knife, may be employed.

Fourthly. When true tuberculous ulceration follows suppuration, it may be desirable to employ—*a.* Fomentations and poultices; *b.* Lotions; *c.* Unguents; *d.* Caustics.

Fifthly. When healing has taken place, but scars and deformity result—*a.* Lotions; *b.* Unguents and oils; *c.* Caustics; *d.* The knife, may be called into requisition.

1. Prior to the actual deposition of tubercular matter in lymphatic glands, some enlargement, as already observed, takes place, which is generally believed to depend on, what has been somewhat indefinitely termed, irritation.

It still remains a vexed question with many, whether the deposition of tubercle is preceded by true inflammatory changes in the invaded gland, or whether the very first signs of increase in size are alone owing to the presence of tubercle?

M. Broussais (*Exam. des Dict. Méd.* tom. i, prop. 168) and Dr. Alison are foremost among those who believe that tubercles are deposited subsequently to a more or less deranged state of the local vascular circulation; while directly opposed to this assertion are the opinions of Bayle, Laennec, Louis, etc. But there are certain authorities who lean to a conclusion intermediate between those two views, and admit the occasional origin of tubercles in a state of inflammatory congestion of the capillaries, preceded and accompanied by a constitutional dis-

position to tubercular productions (Article "Scrofula and Tubercles"—Dr. Copland's *Dictionary of Medicine*, 1858.)

The accomplished and experienced physician to whose work I have just alluded, admits that the results of his own observations, gathered, for the most part, from cases under his notice at the Children's Infirmary in London, coincide with the deductions of M. Gendrin; who states that tubercles, during the whole of their early stage, are entirely independent of every form of inflammation; and that it is not until they begin to soften that the tissue surrounding them begins to be inflamed, this tissue then secreting a fluid which aids in dissolving the dense matter composing them. (*Op. cit.*)

It is far from easy, amid such discrepancy of opinions, to enjoin any fixed methods of topical treatment for the alleviation or removal of the earlier stages of glandular tubercular implication; and, therefore, the practitioner cannot too closely study the particular features of every case of the kind which may fall under his notice, as a resort to local means of treatment ought to be based on the due recognition of the pathological changes which are then taking place.

Notwithstanding the difficulty of arriving at a correct appreciation of the earliest development of glandular tubercle, still, as was observed when treating of the recognition of the affection, it may be materially lessened, by marked attention not only to the enlargements themselves, but to constitutional formation, more general derangements, and extraneous causes.

When once the mischief, involving a single gland, or a series of glands, is correctly estimated, one or more of the following methods may be employed, either to arrest its further progress, or to modify the symptoms and results which ensue:—

a. Warmth. One of the most common causes of tuberculous implication of the externally situated lymphatic glands is an undue exposure to cold and vicissitudes of temperature.

When disease is thus engendered, provided it has not too far progressed, it often results that a mere cessation of the cause leads to a gradual but certain recovery. A knowledge of this fact prompts the practitioner to advise change from a cold to a warmer climate, and also to recommend that the implicated glands should be exposed as little as possible to the action of diminished and varying temperatures. To this end it is often advisable to protect the enlarged glands by means of flannel, cotton-wool, or a black silk neckerchief; and it is often astonishing to find how warmth thus ensured conduces towards speedy resolution. It has already been shown that according to the position of the lymphatic glands, so is the frequency of diseased action; and there can be no doubt, that attention to due regulation of local temperature is a feature of very considerable moment in the treatment of these organs when but slightly involved. I am satisfied that it has often fallen to my lot to ward off an approaching attack of serious glandular mischief, by simply advising the more appropriate clothing of exposed portions of the body; and there can be no doubt, that among the higher classes the susceptibility exhibited by delicate children to experience glandular derangements is, in a great measure, to be traced to the inefficient way in which the neck and shoulders are protected from variations of temperature.

b. Fomentations and Poultices. Although warmth is of such direct advantage in the reduction of glandular enlargement of an incipient tubercular character, it is questionable how far the very common practice of resorting to fomentations and poultices is commendable. Experience has convinced me that too frequently such means are employed most indiscreetly, and, hence, the most serious consequences sometimes ensue.

By a resort to one or other of these applications, a perturbed local circulation is not unusually still more altered,

and destructive changes, such as softening and suppuration, are induced. I have over and over again seen such consequences result from an injudicious use of these means, and have, thereby, been led to think that they are only of value when stiffness, pain, and more than usually acute disturbance accompany the earliest manifestations of disease.

If the use of hot fomentations be injudicious, poultices, whether of linseed or bread, are still more so, as they particularly tend to soften and sodden the investing integuments, and, thereby, render them more susceptible of inflammatory changes, especially those ending in abscess.

c. Cold Applications, as those of Water and various Lotions.

In the first stage of glandular tubercular derangement, the use of various cold liquid applications has been forcibly recommended by various practitioners, but I cannot too strongly condemn a general resort to this practice. If in some instances it be fraught with no very decided harm, still it is certainly not followed with that amount of amendment which some would have us believe. Dr. Cullen was opposed to such means in the treatment of glandular tumours, and spoke but disparagingly of the then vaunted *saccharum saturni*, and saline applications. (*Op. cit.*, vol. iv.)

Sluicing with cold water is adopted by some surgeons, but, as a rule, the contact of fluid of a low temperature, especially when suddenly applied, is, I consider, a practice often directly opposed to a favourable solution of the existing mischief. But topical applications of certain lotions, such as those of lead, spirit, and ether, may be advantageously used when the inflammatory disturbance is subacute, or even of a still more intense character. With the late Mr. Goodlad the use of sulphate of zinc in an aqueous solution was held in high repute, and contemporaries equally extolled the supposed virtues of chloride of ammonium.

With Lebert, I believe that these and various other soluble

salts are of comparatively little, or no real value. Topical ablutions with salt water were supposed by White and others to possess a specific effect on tubercular glands in an early stage; but, I confess, the same opinion is not confirmed by my own observations; for it is more than probable that the fresh air, exercise, and internal medicinal treatment of which the patient at the same time partakes are, in themselves, quite sufficient to lead to resolution.

d. Frictions. Early in the commencement of the present century, friction, by means of the hand and certain substances, was very strongly recommended. Mr. Russell remarks, "I consider the use of repeated friction to be one of the most valuable improvements which have been introduced into practice in modern times." (*On Scrofula*. 1808.) When induration has proceeded to such an extent that manipulation of the tumours no longer causes tenderness or pain, I am sure that well-regulated and occasional dry frictions by means of the hand, with, perhaps, the addition of some interposed substances, such as common flour or starch, will be found advantageous in reducing, if not the bulk of the glands, at least that consolidation of the cellular and surrounding tissues which so frequently results from glandular implications. But, as a rule, such means cannot be depended on for the resolution of enlargements which result from incipient tuberculous mischief; and, consequently, it is only of real utility when the disease has not progressed beyond simple inflammatory changes.

What I shall presently urge against the use of unguents and other local applications may be consistently applied to the common resort to frictions; namely, that injudicious and frequent topical interference with tubercular glands oftentimes promotes the generation of more active mischief, and certain changes, such as softening and suppuration, which it is most desirable to avoid.

e. Liniments and Oils. If it be an accepted belief that

the enlargement which ensues in the earlier stages of tuberculous disease of the glands is, as a rule, dependent on the actual deposition of tubercle without the previous occurrence of decided vascular irregularity, then, I think, that the less local means are adopted the better; for it is by no means satisfactorily proved that tubercle, even under the most favourable circumstances, is always capable of such disintegration as will permit of absorption and removal. Dr. Copland, however, states, "that scrofulous and tubercular matter may become partially resolved and absorbed, the cretaceous or mineral parts of the deposit only remaining, as has been proved to take place; but the exact circumstances in which it does take place have been very insufficiently ascertained." (*Op. cit.*)

It, therefore, appears that before adopting the use of any local applications in the shape of liniments, oils, and unguents, it is all-important to arrive at, at least, a tolerably correct appreciation of the cause and nature of the glandular enlargement, and whether simple inflammatory action alone, or in consort with tubercular deposit, constitutes the increase in size.

Frictions by means of one or more of the above-mentioned applications must, therefore, be employed with extreme care; for, unless such be observed, it is more than probable that not only disappointment, but actual mischief may result. When the surgeon foresees that the use of either liniment, oil, or unguent, may be of service, one of the following may be selected:—

Liniment. To cause sufficient irritation, so that the absorbents may be efficiently stimulated, an useful preparation is that composed of strong ammonia, chloroform, camphor, and soap liniment, in such proportions as circumstances may point out. Should the swelling still increase or remain obstinate, liniments containing tartar emetic and croton oil may be more effectual; but I am loath even to mention these preparations,

for I am certain that their diligent application more often leads to mischief than success, and that a new phase is, thereby, not unfrequently given to a comparatively harmless, or, at least, latent, form of disease.

Oils. The use of various oils rubbed over and into the integument covering enlarged and apparently tubercular glands in an early stage, is, by many excellent surgeons, supposed to be a practice accompanied with satisfactory results. The oil of the cod's liver, when rubbed over the enlarged glands by means of the hand, appears the most useful, and although it may not frequently be of value in immediately or solely effecting reduction of the implicated organs, still its inunction, as previously stated, is often highly advantageous.

The oil when ozonised (according to the process of Mr. Dugald Campbell), and taken internally, is said to possess greater virtue than when employed in its natural state; and it is, therefore, probable that inunction with it so prepared is still more efficacious.

The combination of the oil with iodine is, however, the most valuable that can be employed. But the presence of free iodine leads to discoloration of the parts to which it is applied, a result peculiarly objectionable to many patients. I have found that iodide of ammonium, in conjunction with the oil, and which I believe to be equally efficacious, is not followed by the same objections; and I now seldom or never prescribe pure iodine in combination with oil to be used as a local application to those parts of the body which are exposed to observation.

A solution of iodine in juniper oil has been made for me by Messrs. Squire, of Oxford Street, but I cannot advocate its use as a local application, owing to the exceedingly pungent smell which the solvent possesses. It may, however, be remarked that a very considerable amount of iodine can be held in solution without imparting to the oil the intense red colour generally so indicative of its presence in other solutions.

Unguent. From the earliest times the use of certain unguents has been more or less lauded by all writers on scrofula. Doubtless their value in incipient stages of glandular tubercular implications is, in a measure, founded on a belief in the chronic inflammatory action which has pervaded the gland tissue. When it is expedient to have recourse to local incision, it is usual to select such preparations as contain mercury, iodine, etc., in virtue of their universally supposed efficacy in all kinds of scrofulous maladies.

The mercurial ointment most in repute is the *unguentum hydrargyri* of the *Pharmacopœia*, which can be diluted in proportion to the extent and nature of the induration. A small portion of the ointment is to be rubbed once or twice a day, for a few seconds or minutes, over the gland swellings, provided that no inflammatory processes have rendered the covering integuments irritable and painful. When diminution of the enlarged and affected glands follows a somewhat prolonged use of the ointment, I am inclined to believe that the effect is oftentimes to be traced to the absorption of the mercury into the system, and its subsequent local action. The readiness with which this metal is absorbed tends to confirm this suspicion; and it is partly on account of its lowering action on the economy that, as a rule, I object to its general administration in certain forms of scrofulous disease.

When iodine is advised as a local application in the form of ointment, it is generally employed as recommended by the *Pharmacopœia*, under the name of *unguentum iodinii compositum*. I seldom have recourse to this preparation, on account of its dark red colour, especially when not quite fresh, and the properties it possesses of staining and irritating the skin to which it is applied. I now prescribe an ointment composed of a scruple or a drachm of iodide of ammonium, and an ounce of spermaceti cerate, a portion of which can be rubbed into the integument once or twice a day without causing the above-mentioned results. In this, I think,

an efficient substitute is gained, and one much more to the fancy of the patient.

The same remarks apply, but in a less forcible way, to the use of iodide of potassium; but I find that iodide of ammonium, by reason of its less stable and somewhat slightly caustic properties, is more suitable. When an ointment composed simply of iodide of ammonium is carefully prepared, it ought to be almost, or quite, colourless, and remain so even when exposed for some time to the influence of the atmosphere.* At the present time, I have two patients under my care, the subjects of tuberculous disease of the cervical glands, who have experienced much benefit from the local application of such an ointment. Sometimes with considerable benefit, mercury and iodine may be associated together, in the form of *unguentum hydrargyri iodidi* (*Pharm. Lond.*). The latter mineral may also be combined with lead, as in the *unguentum iodidi plumbi*, which has been recommended by Dr. Copland and others. When pain and irritation complicate the progress of the glandular mischief, opium may be advantageously combined.

In addition to the unguents I have enumerated, many containing bromine, tar, and other ingredients, are in frequent use, according to the fancy of the practitioner. I am, however, convinced that the local application of ointments, especially when persisted in, is very frequently followed by untoward results which it is most desirable to prevent.

f. Paints and Tinctures. In the form of paint or tinctures, iodine is very often locally applied, but not always with advantage even in the most favourable instances, by reason of the great irritation which it causes. I am confident that the far too common resort to these preparations is fraught with

* Ointments containing iodide of ammonium in various proportions have been carefully prepared for me by Mr. Fincham, of Baker Street.

extensive and irremediable mischief. An amount of irritation resulting in premature softening and suppuration is, thereby, induced, and a comparatively trivial affection is converted frequently into a much more formidable one. A case illustrating these observations has very lately fallen under my notice; and, from many which I have seen, I am led to discourage, rather than recommend, even with caution, a resort to means so liable to complicate existing mischief.

g. Blisters and Plasters. The remarks which are offered regarding liniments, unguents, etc., may, with equal propriety, be applied to the employment of blisters and plasters. The application of a blistering substance is, however, sometimes of advantage in deciding whether a single gland, suspected to be of a tuberculous character, is really permanently impaired and enlarged, or capable of reduction and complete resolution. The employment of plasters I have always looked upon as a relic of empirical practice, and have seldom had occasion to resort to their application, except to gratify the fancy of a whimsical patient.

h. Electricity and Galvanism. The application of the electric current to tuberculous glands in a somewhat recent state was first suggested by Sigaud La Fond, and, subsequently, approved of by White, and other authorities on scrofula. I cannot, however, say that I have ever seen the least advantage result from the most persistent use of electricity or galvanism; and, I believe, those who so strongly advocate the use of such subtle means are really not aware of the true pathology of glandular tuberculosis.

i. Caustics and Actual Caution. Completely or partially covering the integument investing incipient tuberculous glands with certain caustics is a method frequently practised on the continent, under the impression that the absorbents are,

thereby, stimulated to the extent necessary to remove the existing mischief. In the same way, the actual cautery is applied at various points of the skin enclosing the diseased gland or glands, with just sufficient precision to ensure destruction of the cuticle and induce a moderate amount of irritation. Having seen this plan resorted to in some of the Parisian hospitals, I gave it a trial, but soon relinquished an experiment, the results of which proved unsatisfactory, and uncertain.

Such is a brief *resumé* of the means most generally employed for the topical treatment of *incipient* tubercular disease of the external absorbent glands; and although I have stated that occasionally the adoption of certain preparations is followed with advantage, still I cannot too forcibly insist on their discretionary use, and on the importance of remembering that the greatest benefit is to be derived from a systematic and judicious administration of certain medicines and diet, and a strict attention to all sanitary influences.

II. Notwithstanding the most judicious and persevering resort to such therapeutical means as have been described, it very commonly occurs that tuberculous glands remain in a state of induration and enlargement for an indefinite period, and demand more direct surgical interference, on account of the disfigurement, inconvenience, and positive danger to important structures and functions which they cause. But the adoption of such measures as will be presently discussed depends on certain conditions, which it is all important to bear in mind; for an injudicious employment of them not only frequently leads to indifferent results, but to consequences the opposite to those which the surgeon desired.

No precise rules can, however, be laid down, by which to regulate the kind of local treatment to be followed; although there are certain features in every case falling under notice

which, if duly appreciated, will enable the practitioner to select those means which are most appropriate. An acquaintance with the history and symptoms exhibited by slow, insidious, and obstinate tuberculous disease of the lymphatic glands, situated, for instance, in the neck, at once forbids a too speedy resort to definite measures; for it commonly happens that although, for a considerable period, only one or two glands in a particular region may evidence implication of a persistent character, others in closer or more distant relation will sooner or later assume similar morbid conditions.

This is particularly the case when the patient shows a marked tendency to tubercular disease of other organs.

Too great care cannot, therefore, be exercised in recommending a plan of treatment, which, even under apparently favourable circumstances, is not always followed with the wished for success.

When it is determined to destroy or remove one, two, or a limited number of glands, one or other of the following methods may be employed; but they ought never to be practised before recourse has been had to milder means, and to those measures which are known to improve the general health.

Experience has so thoroughly convinced me of the importance of attending to this recommendation, that I rarely suggest even the consideration of any ultimate local treatment ere I have made certain that milder and more general means have, after a fair trial, proved unavailing.

a. Caustics and Actual Cauteries. The destruction of obstinate tubercular glands by means of one or other of these agencies, is a practice which has met with admirers; but I much question not only its advantages but its propriety. An indurated gland, even admitting that tubercular infiltration has led to considerable alteration of the true glandular tissue, cannot be disintegrated and destroyed by means of caustics, without involving the integrity of neighbouring parts, and

occasioning an amount of inflammatory disturbance which may prove constitutionally injurious. It is also questionable whether the ultimate results of this practice be so satisfactory as some authorities assert. I have seen very serious inflammation ensue from even a most careful use of caustics, applied in the way to be first described, and have often had cause to regret that the subsequent processes of healing and cicatrization have not been more perfect.

Several plans for the application of caustics have been suggested and followed from time to time. Some surgeons, after cauterization of the integument covering the diseased gland, destroy the gland itself by means of strong escharotics, such as the Vienna paste, potassa fusa, nitrate of silver, etc. It need scarcely be said that such surgery is, as a rule, far from meeting with the approbation of those who make conservatism the standard of their art. The unnecessary destruction of healthy skin, the pain and nature of the injury, and the scar which remains, even if the diseased organs be effectually removed, at once discourage the adoption of a measure unworthy even of empirics. The same remarks apply with equal weight to the use of the actual cautery, as a means for destroying lymphatic ganglia thus affected.

b. Introduction of Substances into the Diseased Gland. Within the past half-century the destruction of obstinate tuberculous glands has been obtained by a process somewhat less coarse, and more effective, viz.—the introduction of certain substances into the gland itself, for the purpose of creating an amount of irritation sufficient to procure resolution, or causing such destructive changes as lead to softening and suppuration.

Although this practice is not by any means, so far as I am aware, commonly resorted to by English practitioners, still on the Continent it has gained many supporters. Within the last few years, I have seen it pursued in some of the Parisian hospitals, in the following way :—The glandular tumour to be

operated on is first pierced by a sharp thin-bladed knife, when a portion of the caustic to be employed is introduced into the cavity made for its reception. The caustics in general use are composed of various proportions of chloride of zinc, potassa fusa, nitrate of silver, etc., and made into sticks resembling those of macaroni, by means of flour or starch with gum. In this way the caustic selected can be more conveniently applied than in its natural state. If it be desired to promote rapid softening and suppuration, several pieces of the caustic stick may be thrust into the tumour; but, as a rule, those who resort to this method incline to a less rapid destruction of the diseased organ, and, from what I have seen, I believe it to be the wiser plan.

Instead of caustics of this nature, the *trochisques escharotiques de minium*, so strongly recommended by Baudelocque, may be employed. These substances are composed of red oxide of lead and bichloride of mercury moulded by means of paste into the form of ears of corn, and are used much in the same way as the caustic sticks. (*Op. cit.*)

My friend Mr. Hoffman, formerly of Margate, who has paid considerable attention to the treatment of scrofula in various forms, prefers inserting into the tumour to be destroyed a certain portion of *iodide of starch*, which rapidly exerts an effect partly discutient and partly destructive; and from the results of his experience it appears to be a proceeding worthy of adoption. My own experience is, however, in favour of the *potassa fusa* when judiciously employed; for I have reason to believe that the after results are often all that can be desired. Besides these various substances, others devoid of any caustic properties, such as parched peas, etc., are sometimes introduced into diseased glands for the express purpose of inducing suppuration; and, in certain instances, the employment of them is followed with advantage.

Although the contact of strong escharotics is commonly followed by immediate destruction of the part to which they

are applied, and, perhaps, by more or less direct irritation of surrounding healthy tissue, still it is astonishing to see how comparatively little excitement is generated by the introduction of a moderate amount of these caustics into obstinate glandular tumours. In one case I saw treated by a French surgeon of eminence, I anticipated, judging from the amount of caustic paste introduced into a glandular tumour situated in the neck, that the local disturbance would be extreme; but a daily acquaintance with the changes which ensued, showed, what I have since corroborated in similar instances, that the dread of excessive action need not be entertained, provided requisite care be taken.

In three cases, in particular, which I some time since treated in this way, I had no cause whatever to dread the occurrence of undue disturbance in healthy parts, although the patients were not in the most favourable condition.

M. Lebert, although he has had no personal experience in this form of treatment, states that the elder M. Guersant, formerly of the Children's Hospital in Paris, found that the use of these caustics, especially of the chloride of zinc, did not produce a reaction so acute as he might have supposed. (*Op. cit.*)

The introduction into enlarged and diseased glands of small sized wires raised to a high temperature by means of fire heat, or the galvanic current, has been lately much spoken of. Having only occasionally resorted to this plan, and then merely for the sake of trying its efficiency, I am unable to offer any definite opinion regarding its positive value; but I think it not improbable that a discriminate resort to the galvanic wire will occasionally be found of service, as its application is unaccompanied with pain, and there results but slight, if any, subsequent disfigurement.*

* Mr. H. Lobb, who has paid considerable attention to the treatment of various forms of chronic disease by means of galvanism, believes that considerable good is sometimes effected by its application; but that it is of most value when the glandular enlargement is dependent on simple inflammatory changes.

c. The Knife. When tuberculous glands prove refractory to such means as have been described, and a resort to caustics, cauteries, etc., is deemed inexpedient, it is sometimes advisable, as a last resource, to recommend the use of the knife. But, before doing so, it is the duty of the surgeon thoroughly to acquaint himself, not only with the true condition and situation of the diseased glands, but with the constitutional diathesis and state of his patient; for, unless such knowledge be satisfactorily acquired, operative measures will not be followed with that success which might otherwise be anticipated.

The following conditions justify a resort to the knife for the removal of enlarged and obstinate tuberculous glands, ere any evidence of softening and suppuration is afforded. Firstly: When such glands are limited in number and superficially situated; when they have resisted all milder means of treatment, and their presence proves injurious to neighbouring important structures by exercising pressure on large blood-vessels and nerves, and causing impediment to the functions of deglutition and respiration. Secondly: When the diseased glands simply give rise to deformity, and there exists no apparent impediment to their safe removal.

As was formerly observed, the lymphatic ganglia of the neck have a superficial and a deep situation; and although the glands composing each division may become involved with tubercle, the inclusion of the latter is generally accompanied with more embarrassing complications, and the treatment required is consequently more difficult, and often unsatisfactory.

It generally happens, as we have already seen, that when tuberculous disease has manifested itself in one, two, or more of the deeply seated lymphatic ganglia, and when medicinal and other means have failed, but a short time elapses ere the glands in close proximity become similarly affected. It is on this ground that a too hasty resort to the knife is injudicious and unsurgical. When, however, there exists no direct impediment to the removal of one or more diseased glands

placed near large vessels and nerves, the greatest skill is necessary. I have known extensive injury done to these structures in attempting to take away a cluster of tuberculous glands; and it is by no means unusual for the surgeon to find increasing difficulties presenting, the further he proceeds with his dissection; and, instances are recorded in which the number, size and position of the glands, which had become fused into a mass, compelled an abrupt discontinuance of the operation.

In a former chapter I have alluded to one such occurrence; but, fortunately, cases of this description are comparatively rare in the hands of practical surgeons. When, however, nothing short of operative measures will succeed, they must be proceeded with in the same way as is recommended for the removal of non-glandular tumours which are deeply seated, and in relation with important structures.

No matter to what size the glandular swelling may have attained, it is seldom or never necessary to take away any portion of the skin, provided it be healthy. A single straight incision through the covering integument will, should no very severe inflammatory changes have ensued, generally enable the operator satisfactorily to expose the tumour, and subsequently to free it from its connexions with adjacent parts by using the handle of the scalpel rather than its blade.

Not only should the line of incision, especially if the operation be called for in a region exposed to observation, such as the neck, be chosen with due regard to the prevention of future deformity, but the lips of the wound should be joined in such a way as to render the surgeon's handiwork difficult of detection.

When the glands involved in disease are more superficially situated, less surgical skill is required: for there is not so much danger of wounding large arterial and venous tracts and important nerves. The same tact is, however, necessary in endeavouring to obtain a cure with the least possible subsequent disfigurement.

I have frequently met with the most satisfactory results in removing tuberculous glands situated near the surface of the neck ; but then I have been careful to select only those cases which appeared favourable for operation.

I cannot close these observations relating to the removal of enlarged and diseased glands situated in the neck, without again enforcing the necessity of a most careful inquiry into the local and general symptoms exhibited in every case which may be submitted to operation ; for unless this be done, there is every probability of failure, and the occurrence of similar disease in glands which were previously healthy.

A case illustrating these remarks is recorded in the *Medical Times and Gazette* for February 1859. A girl, about sixteen years of age, had removed, by Mr. Hilton, of Guy's Hospital, upwards of twenty glands from the left side of the neck. "The case did well ; but, after the girl had left the hospital, other glands in the same side of the neck enlarged, and we saw her in another hospital about a year afterwards with a swelling nearly as large as her original one."

Although it is most commonly in diseased conditions of the cervical glands that direct surgical interference is called for, still it is sometimes expedient to take away the glands situated in the arm-pit and other parts. Only those surgeons who have undertaken the removal of the axillary glands can be fully aware of the difficulty experienced on account of the near proximity of highly important blood-vessels and nerves ; with care, however, the operation may be safely accomplished. I have already quoted an instance in which I assisted to clear the axilla of tuberculous glands ; and Mr. Hillman, of the Westminster Hospital, records a case in which he successfully took away all the glands of the arm-pit in a boy four years of age.

III. In adverting to the pathology of tuberculous glands, it was stated that the period at which softening and suppuration

occur is influenced by certain conditions which can generally be traced to constitutional and local causes. It was further observed that, although suppuration is a destructive process, it must, nevertheless, be sometimes considered a favourable result, especially when cicatrization follows, and the general health improves.

Suppuration having led to the destruction of a gland, it is a point for consideration, not merely whether direct surgical treatment should be adopted, but of what such treatment should consist.

From the earliest periods in the history of this disease, it has always been a question, when a lymphatic gland has become disintegrated by the formation of abscess, whether an artificial exit should be made by the surgeon, so as to afford relief, and save the complete destruction of a portion of the investing integument; or whether natural processes should alone procure the elimination of the foreign material? My own practice is to treat a glandular abscess, simple or tubercular, much in the same way as the generality of surgeons treat purulent collections in cellular and other tissues. I am convinced that a judicious resort to surgical means not only saves much suffering and cuts short a troublesome process, but prevents that amount of disfigurement which so frequently follows the unassisted destruction of a tuberculous glandular abscess, and the subsequent closure of its walls.

During the progress of suppuration, local applications should be applied with extreme discretion. When inflammation renders the affected glands more than ordinarily painful, fomentations and poultices may be of use; but they are productive of more harm than good when the destructive changes are free from such complications. In the treatment of glandular abscess, it is all important to prevent the surrounding areolar tissue from becoming too extensively involved; and, for this reason, it has been recommended to continue the local application of iodine, as (to use the words

of a practical writer on scrofula) "it tends to circumscribe suppuration, and prevent the implication of the cellular tissue surrounding the glands, which, if left to itself, generally becomes involved to a considerable extent." The advisability of affording surgical assistance in the generality of cases of glandular abscess being admitted, the following methods may be briefly considered.

a. Caustics. The most distinguished of all modern authorities on scrofulous diseases who recommends the treatment of suppurative tuberculous glands by means of caustic, is M. Baudelocque. This surgeon advises that glandular abscesses should be opened by means of caustic; one composed of equal parts of quicklime and caustic potash made into a paste with spirits of wine, and that all the implicated tissues should be destroyed, so that subsequent healing may be satisfactorily accomplished. (*Op. cit.*)

To the general use of caustics for the purpose of opening suppurating glands, I have a decided objection; for I cannot believe that the surgeon is acting wisely in allowing the integument covering organs undergoing such destruction to become so extensively involved. Cases, however, occur where the aid of the surgeon will only be solicited at a period when wholesale destruction has advanced; and then the practice of M. Baudelocque will occasionally be of value. A somewhat modified method of cauterisation, consisting in the limited destruction of that portion of the skin which appears more particularly to sympathize with the deeper mischief, is sometimes attended with beneficial results. I have often employed the potassa fusa to destroy the thinned and diseased integument covering a suppurating gland, in instances where a resort to other means has been declined, or deemed improper. As a rule, however, I believe that, unless the skin be extensively involved, caustic applications are of no decided benefit; but, on the contrary, disappointment frequently follows their inappropriate use.

b. The Knife. A much more precise, less painful, and satisfactory method of evacuating the purulent contents of tubercular glands, is that by means of the knife. On this point, I think, the majority of surgeons, who have paid attention to the treatment of glandular affections, agree. But to enable the practice to be effective, not only as concerns the mere evacuation of the tubercular matter, but the attainment of subsequent healing, and the least possible disfigurement, it is all important that attention should be paid to the following considerations :— Firstly. At what period is it most advisable to give exit to the tubercular matter? Secondly. What should be the nature and extent of the incision, and what subsequent treatment should be adopted to procure healing?

Although, as before stated, the majority of modern surgeons lean to the use of the knife in the treatment of glandular abscess, still an unanimity of opinion does not exist concerning the period at which it should be called into requisition. Some authorities are in favour of early incisions, and some postpone a recourse to the lancet till ulceration and other destructive processes have seriously undermined, not only the structures immediately implicated, but those which should not have been allowed to become more than sympathetically included. When there appears no probability of the absorption of the fluid which has resulted from suppuration of the greater portion of the affected gland, my own practice is to give an exit to it so soon as it can be clearly appreciated, and before the covering integuments have had time to become seriously involved.

But it is not always easy to decide on the exact period at which the knife should be used. Although fluctuation may be detected, it by no means follows that the entire gland is involved in suppuration. Very commonly the suppurative process is limited to the circumference of the organ; and it then becomes a matter of moment whether the surgeon should not somewhat indefinitely postpone interfering, in the hope that the confined fluid will be removed by absorption. Unnecessary

delay is, however, often fraught with mischief, and I believe that a hesitating and uncertain policy, as to the expediency of giving exit to the pent-up matter, is productive of more harm than is generally admitted.

Although, as a rule, no definite plan can be enforced for the surgical treatment of such cases, still it is more than probable that a timely incision, so soon as matter has formed, is the most judicious practice that can be adopted. If this recommendation be followed, I am confident that not merely will the tendency exhibited by the portion of the gland less seriously affected to undergo further destruction be oftentimes lessened, but it will be placed in a much more satisfactory state for regaining its normal conditions and functions. The advantages of this practice may be seen from the details of the following case.

A lad, aged 10, was lately a patient under my care at the Great Northern Hospital, on account of a tubercular gland situated at the lower part of the right side of the neck. At the time of his application, only the superficial portion of the gland was involved in purulent destruction. Fluctuation being detected, an opening was made in the most depending part, which allowed the escape of the fluid. In the course of three days, the wound, which was limited, healed, while a gradual but marked diminution in size of the remaining portion of the gland had taken place.

When only a single gland is affected, comparatively little difficulty will be experienced; but, unfortunately, it more often happens that a series of glands, either simultaneously or in succession, evince a proneness to pass more or less rapidly into suppuration. Cases of this description call for the closest attention of the surgeon, who will have to watch narrowly that the skin does not become extensively implicated, by reason of the close continuity of the various diseased glands.

The rapidity with which suppuration may take place in instances of glandular tuberculosis has already been noticed, and the sad results which so often follow a neglect of local

treatment are too plainly evidenced by the occurrence of tortuous sinuses with hard, unhealthy, and secreting edges, and, if these should ultimately heal, by the disfiguring cicatrices which remain till the skill of the surgeon is called into requisition.

I may quote the following case, as indicating the advantages to be obtained from recourse to early and timely incisions into suppurating glands.

A young gentleman had suffered, when five years of age, from tubercular disease of a small cluster of lymphatic glands, situated near the middle and front of the neck. Softening and suppuration ensued, surgical assistance was too long delayed, and the result is that the part is now disfigured by unsightly scars. When eleven years of age, he experienced another attack of tubercular inflammation of the lymphatic glands, situated somewhat higher in the neck on the same side. Directly suppuration could be detected, I made a linear incision into the gland, and evacuated the matter. The lips of the wound were carefully adjusted, after sponging out its interior, and complete union ensued. No perceptible cicatrix resulted.

One of the very worst cases which I have seen of neglected tuberculous glands, was admitted into the Children's Infirmary, at Margate, about two years since. The patient was a little girl, about six years of age. Not only did the face and neck present one mass of indurated, angry, and discharging ulcers at those parts at which lymphatic glands had been allowed to suppurate and ulcerate, but at the armpits, groins, and bends of the elbows, the same piteous condition existed. This is by no means a solitary instance of the lamentable results which I have known to accrue from a want of judicious care and skill in the surgical treatment of suppurating tubercular lymphatic glands. Although strongly advising a resort to the knife for the purpose of evacuating the contents of a tubercular gland so soon as suppuration has converted the gland-substance into an abscess, and before any considerable

amount of thinning has injured the integument covering the diseased organ, yet I still more urgently recommend the division of the implicated structures, no matter how much involved, in preference to admitting further ulceration and more serious destruction. The surgeon must, however, not be disappointed if, even after a moderately early incision, the edges of the wound assume a strictly tuberculous condition. I have frequently experienced such a result; but have generally considered that, had ulceration been allowed to proceed, the amount of subsequent unhealthy action would have been of a still more formidable character.

Much depends on the fancy of the operator as to the nature and extent of the incision. Some surgeons recommend a very limited one; while others, on the contrary, speak favourably of the advantage of freely carrying the knife through the covering integument. Instead of cutting the tissues, it has been suggested that the purulent matter should be evacuated by means of a puncture with a trochar, care being taken that the wound thus made is closed as rapidly as possible. The advantages of this plan were forcibly insisted on by Henning. (*Op. cit.*)

Lebert recommends, when exit is to be afforded to the matter resulting from suppuration of a tuberculous gland, that a free opening should be made. (*Op. cit.*)

Dr. Ranking advises that the abscess should be punctured with a broad-shouldered lancet, and that, if necessary, a free incision should be subsequently practised. (*Op. cit.*, p. 259).

Dr. Tyler Smith recommends that "a puncture" should be made into a gland when it has suppurated. (*Op. cit.*, p. 103.)

My own experience is in favour of a limited linear incision when the abscess is small, and there is every prospect of the contained fluid being easily evacuated. When, however, the abscess is extensive, and there is reason to suspect that mingled with the purulent secretion will be found shreds of lymph, only partly disintegrated portions of the gland struc-

ture, and cretaceous particles, it will be expedient to resort to a freer incision; but, as it is difficult to foretell the exact condition of the contents of the abscess, I would suggest that the use of the knife be, on all occasions, as conservative as possible, as it is always easy to enlarge the outlet should circumstances point to the necessity of so doing.

But little stress has been laid, even by the best esteemed authorities on scrofula, on the importance of judicious and skilful surgical interference with suppurating glands. Mr. Lloyd, who is precise on some points connected with glandular abscess, only cursorily mentions the puncturing of such, and states that he believes "it is of very little consequence whether a puncture be made or not." (*Op. cit.*, p. 66.)

Although it may be immaterial to some surgeons whether they puncture or incise a glandular abscess, and whether the incisions they practise be limited or free; yet to the patient it is of the very highest importance that the end to be attained be accomplished with as little subsequent disfigurement as possible. I cannot too particularly insist on the importance of attending to this requirement, as it is one which oftentimes not only materially affects the personal comfort of the sufferer, but tends to enhance the reputation of the surgeon and the credit of his art.

It is often a point of extreme nicety to decide at what particular part of a glandular abscess the incision should be made. This is a question which cannot be satisfactorily answered, and will need a different interpretation on almost every occasion. As a rule, it is advisable not to wound the skin at such points where the infliction of an injury would be followed with destructive consequences, and subsequent disfigurement. I have frequently tapped glandular abscesses through healthy parts, by what is termed the subcutaneous method, and have every reason to be well satisfied with the result, as, among other advantages, it allows the distressed integument, and the tissues which surround the diseased gland, to regain their normal conditions, when not too extensively implicated.

After an incision into a glandular abscess has been practised, it becomes a question as to what shall be the future treatment. It should always be the aim of the surgeon to procure resolution and healing with as little delay as possible; but, owing to the constitutional peculiarities which commonly modify all local tuberculous manifestations, and the varying and uncertain nature and extent of the local mischief, it is next to impossible to sketch any definite practice. Sometimes it will be expedient at once to close the lips of the incision, after having thoroughly evacuated the contents of the abscess, so that union and obliteration of the cavity may ensue. This will be much aided by recourse to pressure, etc. When the abscess is large, and the integument not seriously implicated, it has been recommended, after clearing out all foreign matter, to inject the cavity with iodine solutions. (Ranking, etc.) This plan sometimes succeeds, but it is more often followed by increased purulent secretion, and then the healing which ensues is by granulation.

¹ Lebert recommends that stagnation of the purulent matter should be prevented by the introduction of a wick (*une mèche*) into the cavity, whereby the walls may be stimulated to increased and more healthy action. (*Op. cit.*, p. 172.)

My own practice, when I have failed to procure immediate union of the lips of the wound, and a cessation of further secretion, is to endeavour to close the sides of the abscess as speedily as possible by granulation, etc.; for, if this be not accomplished, unhealthy and obstinate ulcerations with fistulæ will, in all probability, result, and cause not only distress and disfigurement to the patient, but annoyance and trouble to the surgeon.

The further consideration of the subject may be advantageously postponed till the local measures for the healing of tuberculous ulcerations are discussed. I cannot, however, refrain from again urging the importance of constitutional treatment when the system is evidently at fault; for, when

such is the case, not only will the employment of mere topical means oftentimes prove unavailing, but positively injurious.

iv. In referring to the destructive changes which are liable to ensue in tubercular conditions of the lymphatic ganglia, it was stated that ulcerations, or the natural mode of allowing communication between the external tissues and an affected gland, may take place in two distinct ways: either at several points on the surface; or by the formation of a large ulcerative opening at that part where the covering textures have become thinnest. It was likewise observed that both processes are attended with consequences which it is most desirable to avoid; and that it is all important to adopt such local means as are best calculated to promote healing, and obtain the least possible amount of disfigurement.

As it is only on a clear insight into the exact condition presented by individual examples of tubercular ulceration, that judicious local assistance can be afforded, it is impossible too urgently to insist on the necessity of correctly understanding the simplicity or complications which render the mischief more or less amenable to one or other of the following modes of surgical treatment.

Fomentations and Poultices. When a tuberculous gland has suppurated, and the purulent matter has been discharged by ulceration of the covering integument, it commonly happens, owing to various causes, that the destructive process is accompanied with pain and tenderness, which can only be relieved by the application of such means as we are now considering. It is impossible for the unhealthy margins of these ulcerations definitely to contract and heal, before the entire gland, or so much of it as is involved in disease, is destroyed.

The sluggish action which usually renders tubercular disease of the lymphatic glands such a tedious affection, at once suggests the propriety of applying poultices of various descrip-

tions, to encourage the ulcerated parts to assume a healthy suppurative condition, whereby the processes of granulation and repair may the more readily be accomplished. Poultices made of linseed, bread, carrot, or chopped seaweed, which latter substance I have frequently seen used by my father with very great success, may be employed, according to the irritable, painful, or tardy nature of the sore. By the alternate resort to fomentations and poultices, recent suppurative and ulcerative action is often, not merely amended, but completely controlled, especially when antiscrofulous remedies are internally administered. When the discharge accompanying the unhealthy condition of these ulcerations is thin and sanious, and the parts are devoid of any great amount of tenderness, it will be advantageous to apply some stimulating application, and then, by means of a poultice, to encourage such processes as alone can lead to satisfactory results.

But, while recommending the use of poultices, I cannot too forcibly insist on the inconvenience which I have very frequently seen follow an indiscriminate resort to such applications. Flabby and unhealthy conditions are not only maintained, but absolutely increased by this constant process of soddening, while the pale and ill-formed granulations which spring up, are rendered still more unfit for permanent and efficient repair. It is by no means unusual, on questioning a young patient suffering from tuberculous ulcerations, on the neck, for instance, to find that poultices have been applied to them for years without producing the expected amount of good. As a rule, therefore, I think, it may be stated, that poultices are of most value when the ulcerations are recent, painful, and remain intractable, on account of some active destruction which is still taking place in the gland over which they are seated; and after stimulating and corroding applications have been employed, for the purpose of changing or destroying the peculiar character of the sores.

Lotions. Mr. Russell has observed that, "in the treatment of scrofulous ulcers under the ordinary circumstances of the complaint, the simplest and mildest dressings answer best." (*Op. cit.*, p. 105.) Accordingly, this distinguished surgeon was in the habit of recommending the frequent ablution of tuberculous ulcerations with sea and cold spring water, and, it appears, with considerable advantage.

When the ulcerations are not complicated by sinuses running into a cavity containing a partly destroyed gland, or extending to indefinite distances under the skin, the application of certain astringent and other washes, is often useful. A decoction of oak bark, or walnut leaves, solutions of alum, sulphate of zinc, and many other substances, will be found of benefit, especially when they are kept in close contact with the granulating surface.

But of all liquid applications, a solution of iodine, in the form of the simple tincture diluted with water to the necessary strength, or aqueous solutions of one or other of the salts of the metal will be found of most avail. The contact of iodine seems to exercise a special, and, oftentimes, immediate effect on the diseased margins; and, although, from various causes, its application will not always be followed with anticipated results, still it justly ranks among the most potent agents which are at the disposal of the surgeon.

Natural baths, impregnated with iodine and bromine, have long been valued by continental surgeons, as most valuable adjuncts in the treatment of tuberculous ulcerations. MM. Lugol and Baudelocque both strongly recommend the treatment of all such cases by artificially prepared baths, containing one or other of these powerful agents, and have each described a method by which one holding iodine in solution may, under ordinary circumstances, be readily and inexpensively supplied. The following formulæ are calculated from French measures by Dr. Ranking, who observes that the bath used should be either of wood or marble, as iodine forms soluble compounds with zinc, tin, or lead.

M. Baudelocque's formula is as follows :—Water, 60 gallons ; iodine, 2 drachms ; iodide of potassium, 4 drachms. Lugol's formula is stronger, consisting of 3 drachms of iodine, and 6 of iodide of potassium to an ordinary bath. The quantities for children should be about one-third those for adults. (*Op. cit.*, p. 249.)

I have frequently succeeded in obtaining healing and cicatrization of tuberculous ulcerations and fistulous tracks, by the application of a lotion composed of from five to thirty drops of the simple tincture of iodine to an ounce of water. Iodine, topically applied, seems to possess a special influence over lesions of this character ; but it cannot be denied that its good effects are generally more marked when, at the same time, it is administered internally.

Besides the application already mentioned, that known as *black wash*, composed of varying proportions of calomel and lime water, is, oftentimes, the best that can be used. It is astonishing to see how rapidly mercury in this form will sometimes arrest the sanious discharge from the pale and irritable margins of the ulcer, and afford fresh vigour to the secreting surfaces. I have known some of the most refractory scrofulous sores heal rapidly and permanently under this treatment, and I could quote cases to prove its value when other applications had been vainly tried.

c. Unguents. In the simplest forms of ulcerations following tubercular destruction of the lymphatic glands, my own experience leads me to speak but disparagingly of the value of ointments, although I am aware that many excellent surgeons regard them as of the very highest utility. I have been led to this opinion from numerous disappointments which have followed their use. While, however, I disapprove of their general employment in such instances as above-mentioned, still I admit their advantages on occasions when sinuses and fistulæ need stimulating, and when irritability and pain urgently demand

the local and continual contact of narcotics. In a word, they may really prove of utility when a recourse to lotions and various solutions is inadmissible. When ointments are employed on account of the chronic and complicated character of the ulcerated surfaces, those composed of the various forms of iodine and its salts will be found among the most useful. I can specially recommend an ointment composed of iodide of ammonium in the form already indicated.

The *Unguentum Elemi*, the *Unguentum Plumbi Iodidi*, or the *Unguentum Hydrargyri Iodidi*, will be found valuable when indolence and inactivity render the mischief tedious and difficult of healing. Portions of one or other of these ointments may be kept in contact with the ulcerated surface, by being spread on slips of lint, or rubbed into cotton wool.

But in whatever stage of the affection, and in whatever way such applications are used, I must confess that I entertain for them no great predilection, when other means can be substituted. Without being, I consider, extraordinarily efficient, they have the disadvantage of proving to the patient both disagreeable and inconvenient applications.

d. Caustics. On looking through a long list of cases illustrating tegumentary ulceration following suppuration of tuberculous lymphatic glands, the greater portion of which I have tabulated, and already, statistically and otherwise, referred to, I find that, in very many instances, the long duration of the diseased action had rendered the implication of the skin and areolar tissue more serious than might, at first, have been expected. When such was the case, it was found that the ulcerated integument presented thickened, indurated, and torpid margins, and was undermined to a various extent by tortuous channels, lined by a thick, pulpy, semi-gelatinous membrane, from the surface of which exuded a more or less sanious secretion; and that not only was there a complaint of constant annoyance

and pain, increased on the accession of fresh inflammatory symptoms, but that the entire sore remained refractory to all local means hitherto enumerated and described. If, however, success attended the closest and best concerted topical treatment, it was only temporary; for the repair which resulted was rapidly destroyed by the formation of abscess in one of the enclosed fistulous channels, the contents of which found a ready exit through the new and non-consolidated tissue.

In addition, the patency of a fistulous canal was frequently found to depend on a portion of gland which, although involved in disease, was not in a condition to undergo complete disintegration.

The mere destruction of the unhealthy, hardened, and languid edges of such ulcers, as recommended and practised by some surgeons, is not, therefore, generally sufficient; and it becomes of the greatest importance that a correct appreciation of their true pathological condition and complications, should on all occasions be obtained, ere such powerful remedies as caustics are called into requisition.

From these observations, it may be gathered that the use of caustics becomes expedient under three conditions:—Firstly. When the ulcerated surface is slight and only involves the skin, and, perchance, its connective tissue; Secondly. When the areolar tissue is more extensively affected, and the skin is undermined, the edges, at the breach of continuity, presenting the morbid appearances which have already been described; Thirdly. When fistulous channels extend from the implicated integument to deeper structures, and to the whole or portions of diseased glands, and when, notwithstanding partial reparation and amendment, relapses ensue, causing further mischief, and rendering permanent cure still more difficult of attainment. To meet all these various conditions, caustics must be used in the light of destructive agents.

Firstly. When the ulceration is recent, slight, and compara-

tively superficial, it will generally be sufficient to employ caustic in such a way that the mere surface and margins of the ulcer are destroyed. The only caustics to which I have recourse for this form of ulceration, are the *nitrate of silver* and *potassa fusa*. I prefer the former, as its application is not attended with the same amount of pain, its action being less severe. It may be used either in the solid stick, or in the form of a very strong solution, applied by means of a camel's hair brush.

Ulcerations of this description are usually met with on the neck, and produce a very considerable amount of inconvenience and discomfort. The peculiar kind of scabbing which takes place, forming hard, dry, brownish-yellow incrustations over the surface, tends materially to increase the disfigurement which they cause. To remove this dried secretion, it will be necessary to employ a poultice before applying the caustic in the way I have recommended.

The details of the following case, will serve to show in what way I am in the habit of topically treating such forms of ulceration as are now under consideration.

A young gentleman, aged 16, was brought to me from France, in April 1860, on account of an ulcer, of the size of a five-shilling piece, situated close to the right clavicle. For some years he had suffered from various forms of scrofulous disease, but had gradually improved in health, and the only ailment from which he suffered at the time I was consulted, was this intractable ulcer. All disease of the glands had subsided. Every form of treatment had been employed without effect. Iodine had been enthusiastically pushed, but to no purpose. Every now and then, the ulcer had been *lightly* touched with a caustic; but for six years it remained open, and discharged an unhealthy matter. A distinguished Parisian surgeon at last advised that it should be left alone, as he conjectured that its cure would be followed by a still more formidable scrofulous affection.

On the patient's first visit to me, finding that the ulcer was in all respects one of the simplest form, I rubbed on its surface a stick of nitrate of silver. A desired eschar was produced. On the fourth day, this artificial scab separated, when the raw surface appeared less in extent, and was not nearly so tender. Healing was advancing from the circumference. This treatment was adopted on four more occasions; and, after the lapse of a month, I had the satisfaction of seeing the rebellious surface completely healed, and, after many months, I failed to discover any approaching symptoms of a worse form of disease. On the contrary, the patient rapidly improved in health and spirits, which had suffered great dejection from the long continuance of the ulcer. I have selected this instance as it admirably shows the way in which a caustic application should be used in all cases of this description.

If some of these ulcers be carefully examined, it will be found, as Mr. Hilton has practically shown, that their extreme irritability and sensitiveness are greatly, if not entirely, dependent on the exposure of minute nerves; and that until such have been destroyed or removed, healing will not ensue.* I have always observed that scrofulous ulcers exhibiting great irritability, and causing considerable pain, are the most difficult to cure; and, even in unhealthy patients, it has often resulted that amendment of the constitutional powers has failed by itself to procure cicatrisation. From the highly sensitive condition which these ulcers sometimes present, it might be supposed that the application of the lunar caustic was a very painful operation. Such, however, is not the case; and I could advance many instances to prove the correctness of this statement.

Secondly. The use of caustics is called for when the diseased

* Mr. Hilton, in a late course of Lectures delivered at the Royal College of Surgeons, on the subject of "Rest in connexion with the Treatment of Disease," showed how, by means of exploring the surface of an irritable ulcer with a sharp point, the exposed nerves might be readily detected.

condition is of a more complicated character, and rendered so by the cellular tissue being undermined, and the margins of the ulcer appearing raised, flabby, redundant, of a peculiar purplish-blue colour, and exuding an unhealthy, sanious fluid. The object in such cases is to destroy all the morbid parts, and, by means of mechanical treatment to be presently described, to render the healing as complete as possible. For the destruction and subsequent healing of ulcerations presenting this condition, M. Lugol was in the habit of applying a caustic solution containing iodine in the following proportions:—

℞ Iodinii 3j; potassii iodidi 3j; aquæ ʒiiss. M. Fiat lotio.

Although I am not disposed to gainsay the advantage of such an application, still, judging from my own experience, I feel bound forcibly to recommend the use of the potassa fusa. It is astonishing to see the rapidity with which the most perverse scrofulous ulcerations heal after they have been somewhat heroically treated by this caustic. Some time since, being determined to investigate the advantage of this form of treatment, more fully than I had hitherto done, a certain number of the very worst forms of scrofulous ulcerations were selected for me by my brother and colleague, Dr. W. P. Price, and carefully treated by him. The patients were inmates of the Children's Hospital at Margate, during November and December 1859. Without quoting the particulars of each individual case, I may briefly remark that, in the six instances selected, the disease was situated on the neck and beneath the angle of the lower jaw. In all, healing took place; and in the majority of the cases, comparatively slight scars remained. The application of the caustic in every instance was attended with some degree of pain; but in one in particular, a boy (J. D.), aged seven years, it was much more severe. In one or two of the cases, the ulcerations were likewise situated in other parts of the

body, and to some of these the chloride of zinc was applied ; but the potassa fusa appeared to be the more satisfactory application.

The greatest possible care must be taken when using this potent remedy ; for it very rapidly dissolves, and, by coming accidentally in contact with healthy integument, is apt to cause mischief. Before applying it, I am in the habit of coating the normal skin immediately surrounding the ulcer, with oil or glycerine, by which means any unintentional use of the caustic is not followed by serious consequences.

After the potassa fusa has been employed, nothing gives so much relief as smearing the surface with oil, and applying a tolerably warm linseed-poultice.

Some surgeons have recommended the occasional application of sulphate of copper to the flabby and irritable margins of the ulcers, with subsequent pressure by means of a pad and bandage. Although pressure is, without doubt, a valuable adjunct in the treatment of some forms of ulceration, still, I believe, nothing short of actual destruction of the diseased parts, especially when of long standing, will lead to a favourable issue.

In adverting to the treatment required for the removal of scrofulous scars and cicatrices, it will be seen how a judicious interference by means of caustics, in this stage of the affection, sometimes leads to the most satisfactory results, so far as obtaining healing with little subsequent deformity.

Thirdly. The application of caustics is advisable, when the ulcerations arising from tubercular disease of the lymphatic ganglia are associated with still further mischief, and extensive and obstinate fistulæ result. In such cases, after the surgeon has thoroughly convinced himself of the exact condition presented by the complicated mischief, a careful use of the potassa fusa will be accompanied with decided benefit. If it be applied to the fistulous tracts, when they are lined with

a thick semi-gelatinous membrane, and not associated with existing disease of a gland, the sanious and unhealthy secretion will be changed for one of a more truly purulent character, and will be followed by contraction of the canals. If, in addition, the margins of the ulcerated surface be treated as lately advocated, the very best results will follow. In this way I have often succeeded in closing the most extensive and obstinate sores, and I prefer it to any other method.

But, notwithstanding this treatment, it will frequently happen, especially when the ulcerations are situated on the neck, that complete healing will not take place unless recourse be had to mechanical means. A momentary consideration affords the explanation. The skin covering the neck is closely associated with a thin plane of muscular fibres (the platysma myoides muscle), which, lying between the two layers of the superficial cervical fascia, extends from the lower portion of the face and jaw to the upper part of the chest. The action of the muscle, and its effects on the skin covering it, are obvious. In some persons its functions are more marked than in others. I possess very considerable control over the muscle situated on the left side of my neck, and can, at will, corrugate its fibres, and give it an apparent spasmodic action; but over its fellow I possess no voluntary control.

When, therefore, the skin and cellular tissue of the neck are included in scrofulous ulcerations of the character now under consideration, it will be found, unless the action of this particular muscle be paralysed, that constant motion, although of a partly involuntary kind, will prevent healing and cicatrization. This undue influence may be counteracted by artificially staying the action of the muscle by means of paddings of cottonwool, charpie, etc., skilfully adapted, and maintained in position by means of strips of sticking-plaster and a bandage. I have long been conversant with the advantages of this plan, but have only lately heard it publicly advocated. (Mr. Hilton's *Lectures on Rest*, etc., 1860.)

No matter what caustic is used, it must be the endeavour of the surgeon to procure the best possible results; and such cannot be obtained without due regard to the various practical hints which have been detailed.

In the management of this complicated form of ulceration, I have avoided all mention of the knife, because I believe that its application is generally inexpedient, and that the same end may be more surely attained by less severe measures.

Although I have insisted on the importance of local interference in the treatment of scrofulous ulcerations, still, lest I should be thought to have done so too urgently, I will again repeat that I cannot sufficiently recommend a hand-in-hand resort to constitutional and topical means, for it is only by a judicious application of both, that really satisfactory results can be obtained.

V. It not unfrequently happens, when ulceration follows suppuration of tubercular glands, and heals without the direct attention of the surgeon, that the implicated integument remains disfigured by induration, unseemly scars, and uneven cicatrices. Under such circumstances, the use of certain measures, to be presently described, will oftentimes lead to a favourable solution of the existing disfigurement.

a. Lotions. When induration of the integument and adjacent cellular tissue, results from the healing of tubercular ulcerations, it may frequently be removed by absorption, especially when it is of recent origin, and correct therapeutical means are employed. Without doubt, solutions of various salts of iodine will be found among the most valuable adjuncts which the surgeon has at his command. Mr. Erichsen, in his *Science and Art of Surgery* (3rd edit., p. 465), strongly recommends lotions of iodide of potassium and carbonate of potass: a drachm of each of the salts, with an ounce of spirits of wine and eleven ounces of water, makes, he says, an excellent

application, which should be kept constantly applied to the implicated parts by means of linen or lint covered with oil-silk.

I am in the habit of substituting iodide of ammonium for iodide of potassium, as I have reason to believe that it will be found more beneficial. Sir Astley Cooper placed great faith in a solution of chloride of ammonium; and other surgeons of large experience have written in favour of the use of simple alkaline solutions. Whatever liquid applications are employed, it is all important that sufficient time should be given for a trial of their efficacy; for a satisfactory result is oftentimes only obtained after their most persistent use.

b. Unguents. When the application of lotions has failed to produce the desired effect, it will be advisable to have recourse to some more definite measures to procure absorption and removal of the indurated condition. I have experienced considerable advantage from simple frictions, especially when no abnormal tenderness has been exhibited by the implicated parts. But still greater good will oftentimes be derived from the additional use of certain ointments and oils.

When the aplastic deposits are of long standing, the use of an ointment composed of iodide of ammonium, such as already described, will often lead to gradual softening and absorption of the hardened surface to which it is applied. The great advantage of this application is, that it can be used with freedom without imparting to the skin the peculiar colour which the local employment of pure iodine produces, and whilst equally or nearly as effective, it is in many ways less objectionable to the patient.

When it is deemed necessary to make use of mercurial preparations, the *unguentum hydrargyri* may be selected; or, under certain circumstances, iodine and mercury may be combined in one or other of the forms previously considered. I have elsewhere spoken favourably of the use of oils, when assi-

duously rubbed into the integument covering an indurated gland; and I can also recommend their employment in all false hypertrophies of the skin and cellular tissue. When containing iodine, mercury, or certain stimulating substances, such as ammonia, camphor, chloroform, etc., they will be found doubly advantageous. Great care and discrimination are, however, always needed before advising friction either with ointments or oils. I have known too vigorous and oft repeated applications of these substances, fraught with the greatest mischief; while it not uncommonly occurs that even a limited use of them produces an undue amount of irritation, which leads to ulceration and suppuration, and, in fact, to a reopening of the original sore. When such is the case, I have found occasional paintings with glycerine, in which is dissolved iodide of potassium or of ammonium, of great benefit.

c. Caustics. As already seen, an unseemly scar is one of the most frequent results which follow an indifferently treated attack of suppurative destruction of the external lymphatic glands. When a disfigurement of this nature causes not only personal but physical annoyance, the opinion of the surgeon will oftentimes be solicited as to the best method of obtaining its removal. Scrofulous scars (so called) generally present certain characteristics. They vary in colour from a normal to a bluish-purple tint, have a raised and unhealthy appearance, and are sparingly covered with cuticle. Under certain conditions, they prove irritable and painful, and are always more or less liable, especially when the system is impoverished, to assume diseased changes by reason of their low standard of organisation.

When a scar resulting from the healing of a tuberculous ulcer, or one in connexion with a gland which has been involved with tubercle, is of such a kind as to give rise to disfigurement, and becomes the seat of irritation and pain, its destruction may be deemed advisable, so that nature, immediately assisted by

art, may more efficiently repair such structures as have through disease lost their original integrity. For this purpose, the use of various caustics has from time to time been recommended. Among those most generally selected, the following may be mentioned:—Chloride of zinc, potassa fusa, nitrate of silver, and the strong mineral acids. I am most disposed towards the employment of potassa fusa, and seldom select any other caustic, as I have found it, when judiciously employed, in every way the most satisfactory. One or two applications usually suffice; and, if care be taken, the new tissue which results will bear a very close resemblance to healthy skin, although to the accustomed eye it will most generally be found to differ. It usually possesses a more shining and glistening hue, and presents a stretched appearance. Wandering over its surface will be detected irregular, tortuous, red, linear vessels; and here and there, especially if the tendency to scrofulous action be prominently marked, a proneness to ulceration. Although the patient may be well pleased to recover from a severe attack of glandular tuberculosis, with no further disfigurement than one or more patches of new tissue, which, if not absolutely similar, bear a close resemblance to the normal cutaneous surface, still the surgeon is bound to use every endeavour to forward the most advantageous form of cicatrisation and reparation.

It is only of late years that a correct acquaintance with the nature and nutrition of scars and cicatrices has sufficiently impressed practitioners with the importance of regulating and avoiding their unnecessary formation. There is no doubt whatever that the growth of cicatrices is accomplished by assimilative processes identical with those which lead to the development and increase of healthy tissues. Consequently, it is expedient that all available means should be used to keep them as limited as possible; for although, in the early years of childhood, a scar resulting from tuberculous destruction of a lymphatic gland may be nearly imperceptible, still, at a more

advanced period of life, it will be found to have relatively increased with the other tissues of the body; or, to use the words of Mr. Paget, "the scar of the child, when once completely formed, commonly grows as the body does, at the same rate and according to the same general rule; so that a scar which the child might have said was as long as his own forefinger, will still be as long as his forefinger when he grows to be a man."* (*Op. cit.*, vol. i, p. 49.)

Bearing these facts in mind, I make it a point never to resort to the use of caustics for the destruction of scars and cicatrices, unless I can be tolerably certain that improvement of an appreciable kind will result. In general, the pure caustic potassa, in stick, although immediate and sometimes severe in its effects, will be found the most advantageous form; for, with care, the diseased tissues can with nicety be destroyed without in any way endangering those of a more healthy nature. When the cicatrices are numerous, and situated, as they usually are, on the neck, it is generally more convenient to destroy them by degrees; for, in this way, the surgeon will be better able to accomplish what always proves to be a delicate, and, indeed, sometimes no very satisfactory task. After the formation of an eschar, soothing applications will be found most grateful. In the course of a day or two, the destroyed portions will separate, and leave a healthy surface. If this surface be on a level with the surrounding skin, it will be easy to induce cicatrization and a permanent improved condition. Should one application of the caustic prove insufficient, it may be repeated, but not without giving some slight pain. The practitioner will, however, probably encounter but little difficulty in the judicious destruction of such scars and cicatrices, which cause an amount of disfigurement unpleasant to the

* My friend and colleague, Mr. W. Adams, has lately called attention to the importance of regulating the formation of scars, etc., in some interesting remarks on the growths of cicatrices proceeding *pari passu* with the rest of the body. (*Pathological Transactions*, 1860.)

sufferer, and by no means creditable to surgery, provided due attention be paid to certain requirements which have been noticed in these pages.

d. The Knife. When the cicatrices which result from the healing of suppurative lymphatic glands are very extensive, and cause serious disfigurement, they may oftentimes be removed, or considerably lessened, by a judicious and skilful recourse to the knife. The peculiar puckered condition which these cicatrices assume has already been alluded to; but it remains to be noticed how position and various circumstances influence their formation. A cicatrix following destruction of one or more of the superficial cervical glands situated in the middle of the neck, assumes a permanent puckered and dimpled appearance, by reason of the skin being glued to the deeper structures; for it will frequently be found impossible to elevate the integument so implicated, from the parts placed immediately beneath. When lymphatic glands situated near to bone are destroyed, and where there is a paucity of soft covering materials, the cicatrices resulting will be likewise found adherent, not only to the cellular sub-structure, but to the bone itself. It is most usual to observe this condition at the base and angle of the lower jaw, beneath the eye, on the forehead, and over the clavicle.

When cicatrices of this character disfigure these various parts, they may be treated by the knife in one or other of the following ways.

If the cicatrix be healthy, and its unsightliness be mainly dependent on its puckered and dimpled appearance, which results from its adhesion with deeper tissues, it will oftentimes suffice to sever the bond of adhesion, and prevent, during the healing of the wound which has been made, a re-union of the divided parts.

An operation of this nature is slight, free from any great amount of pain, and oftentimes productive of much benefit.

The details of the following case illustrate how such a proceeding may be accomplished. A girl, aged 15, who had suffered for many years from various forms of scrofulous disease, experienced considerable inconvenience from an unsightly cicatrix, situated on the upper part of the right cheek, over the junction of the malar with the superior maxillary bone. The principal deformity arose from its firm adhesion to the bone. The tissue forming the cicatrix was very thin, and there appeared to be little, if any, interposed structure between it and the bone, while the patient had a fat chubby face, so that the deep depression which thus resulted was rendered the more disfiguring. A thin bladed narrow knife (a tenotomy knife) was inserted at the distance of about a quarter of an inch from the outer margin of the cicatrix, and passed obliquely down to the point of adhesion, which was then freely divided, care being taken to keep the point of the knife close to the bone. When division had been satisfactorily accomplished, the opposing raw surfaces were separated by drawing the cicatrix away from its old position, and retaining it in its new one by means of sticking plaster. In this way, the two surfaces were allowed to heal without the possibility of their again becoming united. In four days time, the cicatrix was allowed to slip back into its former locality, when it was found that considerable improvement had resulted, although it was impossible, as it is in all similar cases, for the deformity to be quite removed, on account of the loss of cellular tissue, fat, etc., which had taken place.

I have resorted to a similar operation when the cicatrix has been situated beneath the margin of the lower jaw, and with even better results. The proceeding is, however, still more satisfactory when the band of adhesion is connected with soft parts only, as where the cicatrix is situated in the neck beside the sterno-mastoid muscle. When the cicatrices are more complicated, it is often expedient to resort to a somewhat more extensive use of the knife, and entirely to remove the disfigured

integuments. This may often be accomplished to the credit of the surgeon and the satisfaction of the patient.

The operation consists in entirely removing the cicatrix, and uniting the lips of the wound in such a way that a mere linear scar results. The advantage of such an operation is at once evident, especially if the deformity to be removed be the only one situated in a part of the body usually exposed to observation.

I may quote the following case as illustrating the advantages to be derived from such a method of treatment. A young lady consulted me, in the autumn of 1859, on account of an ugly scar, about two and a half inches in length, situated on the right shoulder, in such a position that she was unable to wear a low dress. Under the influence of chloroform, it was removed, great care being taken perfectly to adjust the margins of healthy integument, so that a mere linear seam should result. This was accomplished by means of delicate wire sutures; admirable union ensued, and, in a week, she left London, well satisfied with the result obtained.

I could quote many instances in which a judicious application of the knife was followed with decided advantages, but the above case is sufficient to prove the fact.

For the adjustment of the lips of the wound, I am in the habit of using a fine metallic pin, with the figure-of-8 suture, such as is employed by continental surgeons, in preference to the sewing needle armed with either silk or wire.

It occasionally happens that the cicatrix resulting from supuration of lymphatic glands, is so extensive that neither of the above operations will prove of any service. It then becomes advisable to remove the cicatrix and transplant a portion of adjacent healthy skin—in fact, a true Tagliacotian operation is needed. It is fortunate, however, that such a severe measure is seldom required; although I have resorted to it in instances in which the lower eyelid has been extensively disfigured, and serious conjunctivitis, and other affections of the eye, have resulted from inability to close the eyelids.

When mere bridles of integument cause additional disfigurement to a cicatrix resulting from destruction of a gland, they may be removed by means of the scissors or knife, without causing any special pain or annoyance. Situated on the anterior surface of the arm are one or more lymphatic glands, which sometimes become greatly enlarged and suppurate. The destructive action not unfrequently involves the flexor muscles and tendons, and the consequence is, that a serious amount of contraction of the fingers ensues.

I have very lately seen, in the practice of my friend Mr. Fergusson, a case illustrating these various features. The patient, a young lady, had suffered from scrofulous suppuration in front of the arm. Two or three of the fingers remained considerably flexed, and could not be extended, by reason of the contraction which had ensued in the muscle supplying the tendons—superficial flexor of the fingers. Division of the contracted tendons was resorted to, and the patient regained an excellent use of the fingers.

Such is a brief notice of the advantages which may often be afforded by the surgeon in cases of disfigurement and deformity arising from tuberculous and simple destruction of the lymphatic glands. But while I have endeavoured to point them out more forcibly than, perhaps, other authors on scrofulous diseases have done, yet I cannot too urgently insist on the importance of due attention being paid, both by the patient and the practitioner, to the various destructive and reparative processes which ensue, when the external lymphatic system is invaded with tubercle; believing that in the treatment of this disease and its results, prevention is, on all occasions, better than cure.

